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Textile World

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Editor: Douglas G. Woolf

Statistics Seasoned With Suggestions

STATISTICS have a reputation of being dull fellows. In the main, they have earned it.

But statistics can be made dynamic; they can be forced to tell a story which will interest the most blasé reader.

The Cotton-Textile Institute, we feel, has recently been furnishing interpretations of statistical facts which are of absorbing interest to the industry. We do not know whether this represents a new policy; we do know it is a constructive job.

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In these statements, George A. Sloan, president, has presented the results of special studies conducted by Sydney P. Munroe, manager of the cost section of the institute, and has translated those findings in terms of current market developments.

The first statement, released about two weeks ago, analyzed the narrow sheetings situation both as to costs and prevailing selling prices, and concluded that there was no justification for full operation of any narrow sheetings mill or for acceptance of orders at the then current price levels.

Last week, a similar job was done in cotton yarns. Analysis of cost data indicated that, under current price conditions, the double-shift carded yarn mill would lose more money than the single-shift mill, and that both would lose more than if their plants were idle.

Supplementing these analyses for specific products, a third statement showed the trend in manufacturing margins in four groups of the industry, which indicated that, despite the firmer market position on June 27, print cloth figures were the only ones reflecting a more profitable situation on that date as against the week previous. The conclusion drawn was that there was no economic justification for any increase in working schedules, and that in many lines there was no advantage to be gained by the acceptance of orders at the current unremunerative prices.

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If the institute followed merely the dictates of self-interest, it is quite conceivable that it would refrain from such interpretation of statistics. Release of data, without comment, is the only surely safe course. Any attempt to draw conclusions from facts will be resented by individuals who, for one reason or another, do not agree with the conclusions or else do not desire publicity for the conclusions.

Consequently, it is encouraging to note that the courageous course is being followed. It leads us to believe that, in addition to a lot of talk about the thoroughly unsatisfactory price situation in textiles, something tangible will be done about it.

The Week in Textiles

as Reflected in This Issue

General

Can We Get Anywhere?
The question "can we get anywhere under present textile organization"? is asked and answered. *(page 31)*

Work of Commerce Department
Dr. Julius Klein tells why the Department of Commerce seeks publicity for its findings. *(page 36)*

On Behalf of Research
"Unhurried, scientifically sound, cooperatively sponsored and supported research is the way out," says Wallace Miller, publicity manager of the U. S. Testing Co. in *Testing*, a bulletin issued by that company. *(page 44)*

Cotton

Cotton Spinning
Announcement is made of an automatic-take-up screw-joint spinning roll which is claimed to be practically indestructible, free from serious wear, and trouble-proof throughout the economic life of the frame. *(page 52)*

Carding Production
Production figures for the operations of picking, carding, drawing, slubbing, and roving incident to the production of 8s, 16s, 24s and 32s yarn are given in tabular form. *(page 54)*

Necktie Lining
Necktie linings are often made with regular and reserve hard-twisted cotton warp threads in order that a certain amount of elasticity will be imparted to the fabric. Warp streaks are often due to uneven twist. *(page 55)*

Combed Yarns Hold Firm
Combed yarns showed better tone than carded this week. The recession of cotton from recent highs has given pause to the latter, while the former showed later improvement which has not been interrupted. *(page 61)*

Cotton Off on Acreage Report
Cotton reacted after its recent advance and the acreage report published Wednesday was disappointing to buyers, resulting in a further decline. October went to 9.83 on that day which is 87 points under the high of 10.70 recorded late in June. The acreage report at 41,491,000 acres showed a decrease of 10% from a year ago. *(page 61)*

Fabrics Are Quieter
The rise in print cloths was checked this week by the reaction of cotton and reselling by second hands. Buying operations declined. Finished goods held firm and fine and fancy goods sold fairly broadly. *(page 67)*

Wool

Urges Wool Goods Mergers
Why wool goods mills should merge and details on how they should go about it are given in an article by J. G. Brunini. He considers the diffidence of bankers in entering into such a proposition and suggests plans which he believes bankers would approve. *(page 28)*

Pile Fabric—Pyroxylin-Coated
Elimination of the extra or "slack" warp in pile fabrics has been made feasible by the application of a pyroxylin coating to back of the cloth. *(page 35)*

Must Guard Output Rate
The wool goods rally is only temporary unless production rate is carefully guarded says Dr. L. H. Haney in the TEXTILE WORLD Analyst. Wool supplies are large and the price relatively low, he points out. Reduced stocks of goods have made it possible for mills to maintain cloth prices more strongly than wool prices have held. Continuance of this position rests on control of production to avoid any excess or accumulation. *(page 57)*

Wide Loom
The problem of making a seamless, woven, tubular felt, 1,040 in. in circumference has been solved by the announcement of a loom the width of which, between swords is 540 in. *(page 53)*

Blanket Costs
Figures covering labor and other manufacturing costs of woolen blankets (based on a monthly production of 120,000 to 150,000 loom yards) are presented in tabular form. *(page 54)*

Worsted Yarns Firm
Worsted yarns were firm after a month of fairly satisfactory volume, spinners are unwilling to consider distant deliveries for fear of loading their books unnecessarily with low priced orders. *(page 61)*

Wools Less Active
Wools were less active after the holiday than before, though demand held good. Dealers looked for strength in the London auctions but failed to find it. Wool consumption for May was large. *(page 63)*

Wool Goods Uneven
Wool goods movement is uneven; weavers of worsted suitings are heavily

The Textile Outlook

OVER-STIMULATION in the closing weeks of June when the international debt moratorium was hailed as a panacea has been followed by a quieter tone in nearly all textile markets. The business improvement which will doubtless arise from the debt holiday is now seen as a gradual development, rather than a sudden movement and there is less enthusiasm among buyers in following rising prices. As a result trading is slower and the more speculative markets have receded from their high points. Need for curtailment through the summer is still keen, for it is desirable that textiles meet the advent of fall covering with clean inventories and a will to ask prices which show a fair profit margin. . . . Cottons, though quieter, have been benefited by the rise in June. Finished goods are firm and buyers more ready to operate. Wool goods for men's wear sell steadily for fall, but women's lines are hesitant. Silk goods show a rising trend but in some lines buyers have been repelled. Knit goods are well positioned and fall interest is stirring.

oversold and ask 6 weeks to 2 months for delivery; women's wear fabrics slow. There is talk of price advances in worsteds in August. *(page 67)*

Knitting

Hosiery Routing

Orderly and well-defined routing of goods-in-process is a vital factor from an economic standpoint. A comparison is drawn between the method of handling goods in a shoe factory and a hosiery mill. *(page 31)*

Full-Fashioned Adjustments

A series of practical articles on the correct adjustment of full-fashioned hosiery machines begins in this issue. It will contain many large diagrams drawn to scale, many carefully written descriptions of intricate movements, and many useful hints on maintenance. *(page 40)*

Underwear Shrinkage

Fabric shrinkage subsequent to washing is usually due to skimping in manufacture. Improper knitting-machine gauge and excessive stretching on the tenter are two factors which are the most common causes of underwear shrinkage. *(page 55)*

Hosiery Prices Firmer

Full-fashioned hosiery inclines away from price-cutting; some firms announce fall quotations are more apt to go up than to go down. *(page 69)*

Underwear Stocks Low

Ribbed underwear manufacturers face a promising though belated season; demand is expected to pick up fast within two weeks. Stocks are very low, making for a firmer market. *(page 69)*

And Still They Come!

Bathing-suit business sets record for tardiness, but now distributors make up for lost time. Mills, usually in their between-season period at this time, are crowded with orders. *(page 69)*

Repression, but Not Depression

THE Hoover moratorium plan has been accepted by the world. It adds, in no small measure, to the business recovery. It is an example of statesmanship which has won the approval of men of both political parties.

It did not initiate the recovery. Signs of the latter were visible two months or more ago. We had reached the bottom; the problem was, how to start toward the top. President Hoover pointed the way.

A different attitude is noticeable today. Our fellow-travellers on the 8:07 carry their shoulders a little more erect; they respond to greetings a little more cheerfully. Depression, in the true sense of the term, has passed.

But a boom has not taken its place. The months immediately ahead will probably witness slow recovery. Next winter will not be an easy one; jobs will not be plentiful. It will be a pleasant contrast to last winter—but not a time of unbridled prosperity. Next spring should see fairly complete return to normal.

Any attempt to force boom times will precipitate disaster. Depression, with its sense of hopelessness, is gone. Repression, with its sense of intelligently restrained hopefulness, is here.—*Editor.*

Silk

Orient to Hoboken—28 Days

The Japanese steamer *Sanyo Maru* has arrived at Hoboken, N. J., with a cargo of raw silk after a four weeks non-stop run from Yokohama via the Panama Canal. The 3,000 bales of silk were in warehouse ready for reshipment within a few hours. *(page 45)*

Waxed Sewing Thread

Wax may be applied to sewing threads in the form of an emulsion of stearic acid and paraffin wax. Carefully combined mixtures of these two compounds appear in the market. *(page 54)*

Raw Silk Hesitant

Raw silk is hesitant, and prices are in a state of flux. Manufacturers hold off buying, in anticipation of decline. Yokohama continues firm. *(page 65)*

Broadsilk Prices Tighter

Broadsilk prices for fall lines are tighter, and several firms have announced advances, on cantons and satins. Dull transparent velvet in good call. *(page 67)*

Rayon

Acetate Fabrics Made Iron-Proof

Satisfactory results in iron-proofing acetate fabrics by treatment with caustic soda follow careful control of the saponification process. Three methods which have proved their value in mill practice are described. *(page 32)*

Fall Shortage Forecast

With yarn inventories exceptionally low, and producers holding down on output, there is talk of a possible shortage in fall. *(page 65)*

Processing

Printing with Indigosols

Advantages of the Indigosols for printing on piece goods are outlined, and a new method is suggested for resists under aniline black. *(page 38)*

Short-Warp Preparation

The development of a practical method of preparing short warps for package-dyeing is announced. The system embodies the processes of reeling and high-speed warping. *(page 52)*

Delustering Compound

A convenient and quick acting compound has been developed for the delustering of silk hosiery. The compound is applied in a cold bath in which the goods are placed. *(page 52)*

Mildew in Thrown Silk

Silk is particularly subject to mildew at a temperature of 60°F. when this is accompanied by darkness and a moist atmosphere. Paper cartons sealed with gummed paper may be responsible for mildewing. *(page 54)*

The Business Outlook

SECURITY and commodity markets show the enervating effects of unduly drawn-out dickering over the debt moratorium and of increased scepticism regarding its adequacy in meeting the European emergency—both undoubtedly the outcome of exaggerated and impatient expectations. Our index for the latest week registers some slight reaction from the sharp slackening of business in June, but it is still too early, and too contrary to the usual seasonal trend, to expect any conclusive evidence of the immediate influence on the level of production and trade of new psychological and financial factors now in the picture. The stabilization of commodity prices in June is clearly encouraging, as are many indications of strength in the domestic business structure. The outcome of the seriously strained situation in Germany is still uncertain, and the direction of domestic Federal Reserve policy cannot as yet be definitely determined. But the European outlook has unquestionably improved, and the apparent indications are that the Federal Reserve authorities have embarked at last on an aggressive expansion policy through open market operations.

—The Business Week.

How Woolen and Worsted Mills May Merge—

and Why They Should

By John Gilland Brunini

◆ *The author of the accompanying article outlines a plan of procedure by which, he feels, the aid of bankers in effecting one or more consolidations among woolen and worsted mills could be secured. In addition, he summarizes briefly the advantages which might be expected to result from such centralization.* —Editor.

PUBLIC distrust of mergers has changed radically since the cycle which saw the passage of the Sherman anti-trust law. Indeed legislation has recently recognized that fact by frequent nullifying measures in favor of certain industries. Such reflection of public opinion only emphasizes the economic truth that combinations are often vital for the profitable continuation of specific industries.

This truth is nowhere more applicable than to the woolen and worsted industry. There can be no question that the industry needs the application of some drastic remedy to save it from its present precarious situation. Individual efforts by mill owners have proved ineffectual; only by concerted action, which is the basic principle of any merger, can the evils which beset the manufacturer be eliminated.

There is increasing evidence that mill owners are rapidly coming to accept this idea. Leaders in the industry have repeatedly emphasized the necessity of mergers and there are others who merely await the advancement of a sound and courageous method to give it whole-hearted support.

Banking interests which have been approached have felt that the policy of a merger for the industry is feasible and advisable if a sufficiently large proportion of mill owners will accept the conditions which would be necessitated by cooperative effort.

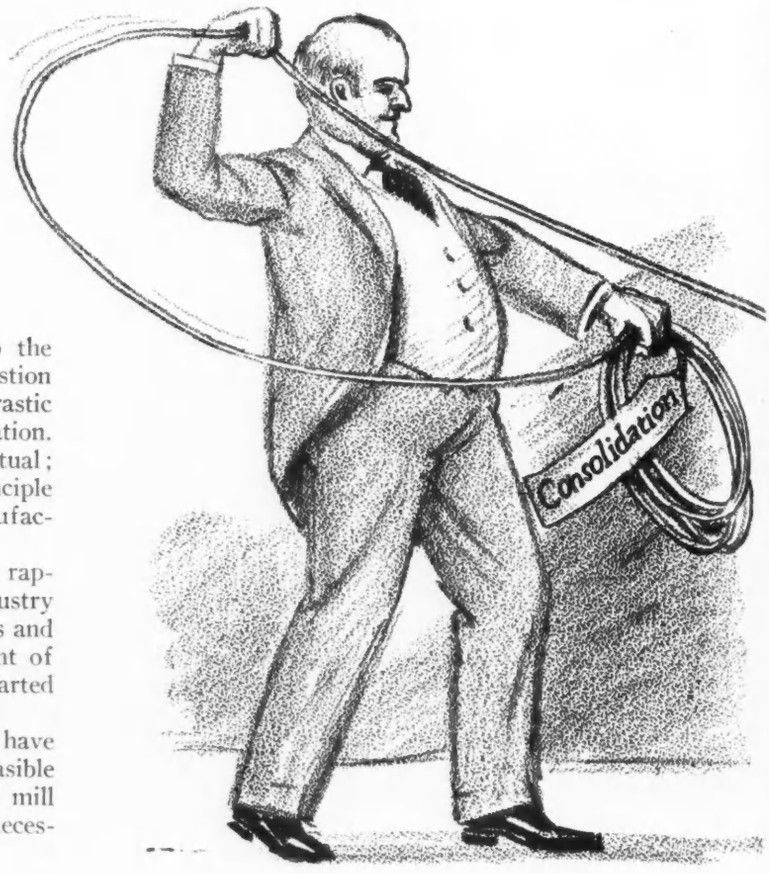
The plan which bankers favor is briefly that under which they would act eventually as a clearing house for a mill combination capitalized from within the industry. They, too, are convinced that, at least at the present time, no stock issue to finance a woolen and worsted merger could be successfully floated. On the other hand, they are certain that the industry has sufficient resources to obviate the need of drawing on outside capital.

More fully, the plan would provide for a banking house or group to direct the terms under which individual mills would enter the merger. It would not be its purpose to take the initial steps of selling the merger idea; that preliminary would have to come from a leader or a committee of leaders in the industry. But once the determination to merge is crystalized, the banking interests could proceed.

It would accordingly be necessary for the industry to get acceptance of the idea from those mills invited to join in a merger. Since no one considers the possibility of *all* mills cooperating, it would be necessary only to obtain the consent of a sufficiently large percentage in a regional group for the merger to be carried through to success.

These mills would then be called upon to sign a time-clause option which would pledge them to a furtherance of the merger scheme. On granting this option the mills would prepare individual financial statements which would set forth all vital facts in regard to their resources equally in terms of capitalization, plants, equipments, stocks and volumes of business. These collected options would then be carefully studied by the bank.

On the basis of that study the banker would be in a position to set the actual working terms on which the merger would be based. He would proceed to the formation of a holding company, controlled by the industry



under the protection of the bank, which would be directed by representatives chosen by the merging units. The equity of the holding company to be apportioned to each unit would be determined by the bank on the basis of the unit's resources set forth in its examined statement. And on this equity, also, would be based the unit's share in profit and loss.

Obviously the option from each mill would allow its owner to accept or reject the plan at this stage. It would accordingly be necessary for the banking house to refer the plan in all its details back to the individual mill owners. Its unanimous acceptance would permit its realization without amendment; the refusal of one or several mills to go further would necessitate certain readjustments which could easily be made.

Once, however, the plan had been adopted and put on a working basis, the merger would be in a position to justify its existence by attacking those evils which can only be successfully combated by a union of mill owners.

It should be stated here that this proposed merger would not be set up in opposition to the American Woolen Co. Instead the latter organization would find its own position greatly improved by the elimination of much cut-throat competition and would discover in the merger more an ally than a rival.

How a Merger Would Help

Meanwhile those who are doubtful of the efficacy of mergers might be most completely convinced by a consideration of the sad state of the industry and how a combination would deal with and correct it.

Obviously a merger would be primarily concerned with finding a solution of the problem of intermittent operation. Over-production would be eliminated by the simple expedient of limiting and distributing production. In some instances this would involve the suspension of work in obsolete plants or curtailing it where equipment is not adapted to turn out fabrics of uniform quality. The merger, too, would be in a position to discourage new and unhealthy competition by retaining control over such mills.

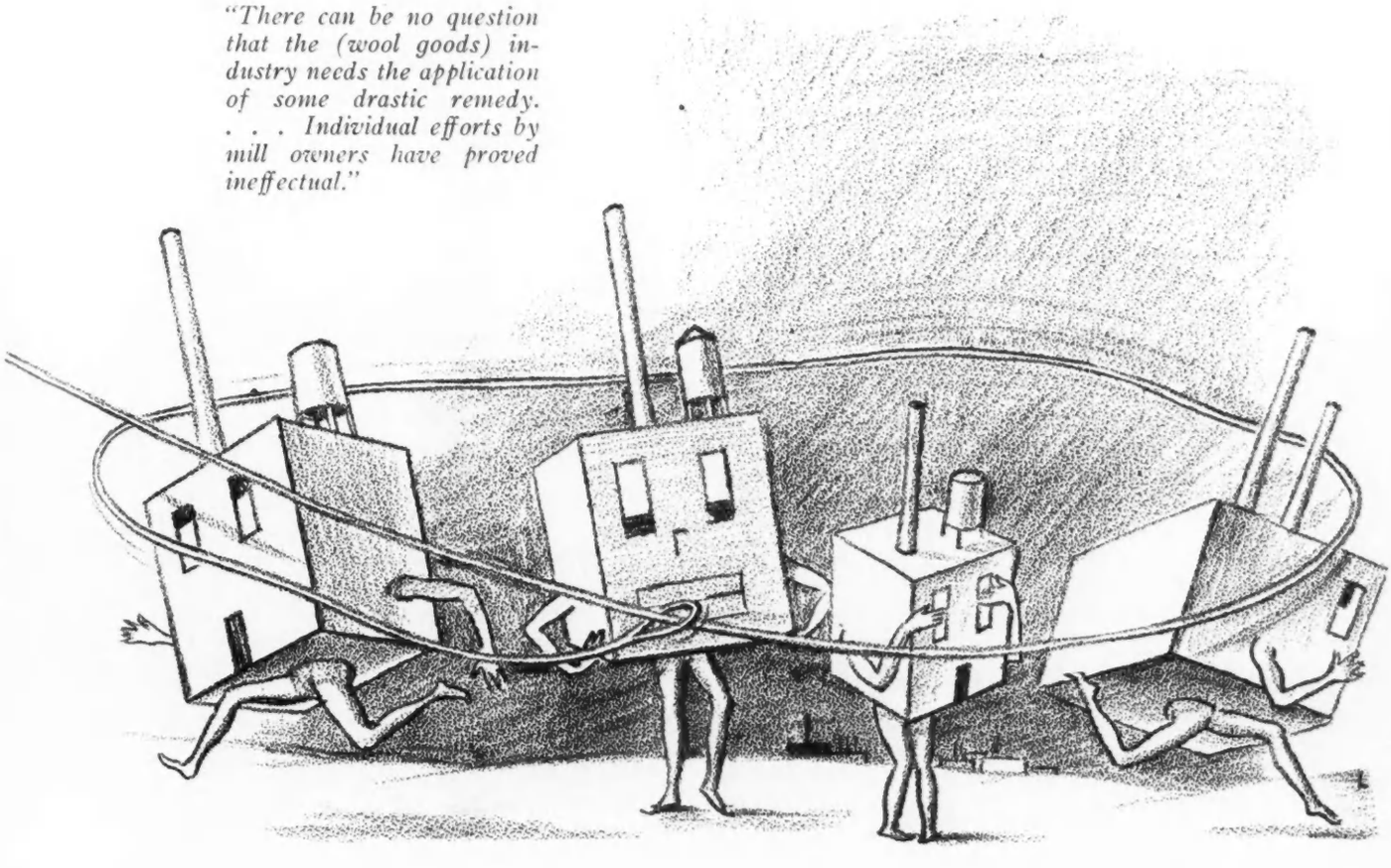
Again the merger would attack the evil of intermittent operation by the establishment of a large sales organization which would stimulate sales during slack periods. Recurring cycles of peak production have brought with them a concentration of "rush orders" followed by months of comparative idleness. No economic law is responsible for or justifies such cycles of production; they exist because no coordinated force has been exercised to combat them.

A merger, too, would be in a position, impossible for an individual mill, to enforce limitation of the time in which orders will be filled. This would result eventually in a lowering of the maximum equipment which the mills must now maintain for use during occasional weeks throughout the year in order to produce goods for quick delivery at a price which is disproportionate to advantageous sales.

Lastly a merger would be able to determine those mills which could most profitably be engaged exclusively in producing fabrics for which their equipment best adapts them. The problems of each mill would be considered not as those of an isolated unit but in relation to the industry as a whole.

There are few practices now prevailing which so loudly cry for unity of action as that of obtaining and extending credit. Whether the individual owner realizes it or not, the credit of each mill is immediately affected by its fellow. The failure of one mill perhaps may arouse a certain feeling of relief that another com-

"There can be no question that the (wool goods) industry needs the application of some drastic remedy. . . . Individual efforts by mill owners have proved ineffectual."



petitor has been eliminated, but upon the banking support of one mill rests the fate of every other, and a weakness in the industry inevitably curtails the possibility of obtaining financial aid for the industry in its entirety.

But more important is the fact that an intelligent handling of credit-grants would tend to protect the steady and reliable mill customers. Under present procedure, the mill owner is actually killing the goose that lays the golden egg when, by haphazard credit extension to unscrupulous cutters-up, he raises up cut-throat competition against those who are the industry's main-stay.

A merger would eliminate the possibility of any dumping of goods on the market at a price below cost by its ability to hold stocks until they could be disposed of at a just profit. On the other hand it would be able to set up a department which would go into all the ramifications of credit and determine safe and fair extensions.

Effect on Operatives

With the correction of intermittent production there would follow many beneficial improvements in the mills with regard to their operatives. A large proportion of the difficulties with labor have been caused by a very heavy turn-over. Much of the necessity for this would vanish with the stabilization of production. There would follow, too, a stabilization of wage scales—a boon to both laborer and employer—and a uniformity of working hours and conditions.

Labor itself would be the first to realize the value of uninterrupted employment. The elimination of unrest and uncertainty, and the increased technical knowledge acquired only by working steadily in one mill, would make for increasing content and efficiency.

Above all the merger would be in a position to encourage new additions to that apprentice class which is so vital to every industry. At the present time few young men find the field an attractive one. Yet if younger workers are not being developed to replace the ranks of older and experienced men, it is obvious that eventually the industry will be confronted with an alarming shortage of skilled operatives.

In addition, the mills, more assured of their workers' permanency, will be able to concentrate on training them exhaustively, not only by actual experience and instruction in the mills themselves but by making possible their attendance at textile schools.

Stabilization would also be produced in the raw material markets, for a merger would establish a central buying board, the maintenance of which, in itself, by its enormous savings, would justify the formation of a combination.

Such a board would eliminate much of the speculation in raw materials which now causes abrupt and disastrous fluctuations. It would be composed of men who would have expert knowledge of materials and prices. Large-scale buying would make possible minimum costs for supplies.

Again there would be large savings in the matter of idle inventories, for the individual mill assured of a ready source of supply would be freed of the necessity of maintaining large stocks of raw materials, with the accompanying cancellation of heavy losses due to interest charges on the investment, insurance and storage charges. Thus would follow the release of a huge amount of capital, now tied up in large stocks, for more constructive purposes. Another advantage which the merger would secure is that which follows from its ability to buy for cash.

The establishment of the board would also aid the mills to plan intelligently and on a basis of much more certainty. They would be furnished with information about the best and least expensive raw materials which can be used to weave and finish material at a stated cost and of a given quality. And the loss of efficiency which follows the shutting down of one part of a mill, because production has been held up in another section due to lack of raw material supply, would be obviated.

The Cancellation Problem

No greater evil has been visited on an industry than that which besets the woolen and worsted industry in the matter of cancellation of contracts. Only because the industry has not presented a unified front has this unethical, if not actually illegal, practice been able to assume such wholesale proportions.

It need scarcely be stated that the solution of this problem lies solely in concerted action of the part of mills acting as a unit. Once a definite stand were taken, the industry would be saved from the tremendous losses which flow from contract cancellation.

The mills cooperating in a merger would be able to establish a central selling bureau, which, besides assuring proper return on products, would be a guide to the manufacturer in regard to the quality, quantity and style of his output. Its expert knowledge would be enlisted to forecast demands and other conditions of the market. Both in actual production and in the making of samples the bureau would drastically curtail expensive and futile experiments.

It would insure also a greater percentage of profitable sales for it would be devoted solely to the interests of the merger. There would not be present the need, such as the present sales agency experiences, to curry favor with customers by granting them unusually favorable terms at the expense of the mills in order to secure their trade. The choking off of unhealthy competition among manufacturers—competition which the sales agency frequently stimulates—would secure a large aggregate profit at prices which would be more favorable and consequently more attractive to the ultimate consumer.

At the risk of repetition it must be stated that all these advantages which a merger would bring to the industry cannot possibly be obtained by mills operating under individual ownership. It is being tried today by woolen and worsted manufacturers and their present situation is sufficient proof of their lack of success.

On the other hand there is a mounting body of evidence demonstrating the value of mergers in other fields. Every day new combinations are being formed and the secret is simply that kindred interests must seek strength in cooperation and coordination. The woolen and worsted industry is no exception. Sooner or later its members must realize that their present course is suicidal, and that the longer a merger is delayed the more difficult will be the industry's restoration to a sound and profitable basis.

"Can We Get Anywhere *Under Present Textile Organization?*"

A Letter to the Editor

TEXTILE WORLD'S Semi-Annual Editorial Inventory, published last week, brought the following letter, in Monday's mail:

"Man! You're entirely too provocative. Blame it on yourself if I take out on you some of the thoughts that your editorial aroused.

"You say the balance is on the plus side, but admit that the major elements of the program have scarcely been scratched. Are we getting our heads above water when we have such demonstrations of lack of foresight as recently exhibited? The things done are all good—they are real accomplishments, but do they outweigh the lack of practice of elementary merchandising? I doubt it. From the standpoint of profits I strongly doubt it. No matter what some of us do to put our houses in order, as long as we have to meet the kind of competition that exists, we cannot and never will make a real profit.

"But looking at it fundamentally, isn't your indictment more fundamental than poor price policy and the lack of planning? Is there any possibility of getting any sanity on these two points with the present organization of the major units of the industry? Why should we expect anything better?

"There was a time when production was dominant, when the market awaited the merchandise. In those days the head of the manufacturing company could dictate policy to his selling agent, the commission house. The change has been a long time working, but none the less sure, and today I know you will admit that the market dominates, and therefore the selling house dominates the mill. In the Worth Street district we have all degrees—from no financial interest whatever except the percentage commission on the sales to the integrated units in which the marketing division is acknowledged to be in a large measure responsible for the profits of the company.

"Anyone—salesman or company—working on straight commission, depends on sales for income. What is more natural, then, when sales decline, than to get them by any means possible? And the first and easiest means is price. Is there any other explanation for the fact that in the decline print cloths lost twice as much as raw cotton? Are the commission houses justifying their existence? Theoretically the mill can take it or leave it. But in these days the lead and the dominance are in the market. And that leadership is poor. I'm not judging all the commission houses. I'm looking at a method of organization and trying to evaluate the results. There are a few bright spots, but as a whole, they're poor.

"I'll confess I don't know how you could present such a thing even if you agreed with me. Yet I'm convinced it must somehow be done. In organization I believe the answer is: Much broader horizontal integration into groups large enough to support vertical integrations of such groups with a marketing organization.

"Some of these vertical integrations would carry through to finished goods, some only to gray goods. Whether it be gray goods, finishing, or complete groups they must be few enough and big enough to dominate the situation and make the remaining little ones see the error of their ways and follow suit in selling policy."

◆

Editor's Note: Answering our correspondent's question directly, there would be no real probability of achieving sanity on price policy and on planning if there were to be no change in organization or in psychology of the major units of the industry. The fact that a change *is* taking place—slowly, it is true, but steadily—is the basis for hopefulness.

The writer of the letter touched one of our live nerves. We have given some thought to this question of the interests of the selling house as related to those of the mill. The inherent weakness in any set-up which encourages volume selling, irrespective of price, is obvious. The reaction on the industry has been pointed out time and again. Consequently, we have been particularly interested, during recent months, in studying the cases of selling houses which go on the principle that they cannot prosper permanently if the mills they represent do not prosper also. We have followed their attempts to make their own returns dependent upon profit to the mill, and not upon the sale of so many pieces at such a commission. We cannot be quite as discouraged as is our correspondent. Even if the number of selling agents who take this view is small in proportion to the total, the fact that there is some thinking in this direction makes us hopeful—just as the fact that a few units in the industry are planning for a year ahead makes us believe that eventually such practice will be the rule, not the exception. Progressive movements are painfully slow in starting, but gather momentum with surprising rapidity.

Similarly, it is not too much to expect a trend toward the type of integration mentioned in the letter. The trend has already started, in a very modest way.

We admire our correspondent's clearness of thought, and his fearlessness. We do not share his sense of futility.

Controlled Processes Insure Success in

Iron-Proofing Acetate Fabrics

By Robert W. Pinault

INCREASED production of acetate yarn has stimulated interest in methods for iron-proofing fabrics containing this material, and has led to considerable research to determine the simplest and most effective procedures. As a result of these studies, various processes have been developed which involve the partial saponification of cellulose acetate with caustic soda. A number of the leading finishers have adopted the saponification method and have worked out procedures which give satisfactory results in textile mill practice.

In Fig. 1 is shown the effect produced by touching a cellulose-acetate fabric with a moderately hot iron. It will be noted that contact with the iron has shrunk the goods, made them stiff, and left a permanent impression. A very hot iron may do even further damage, causing the goods literally to melt and adhere to the iron.

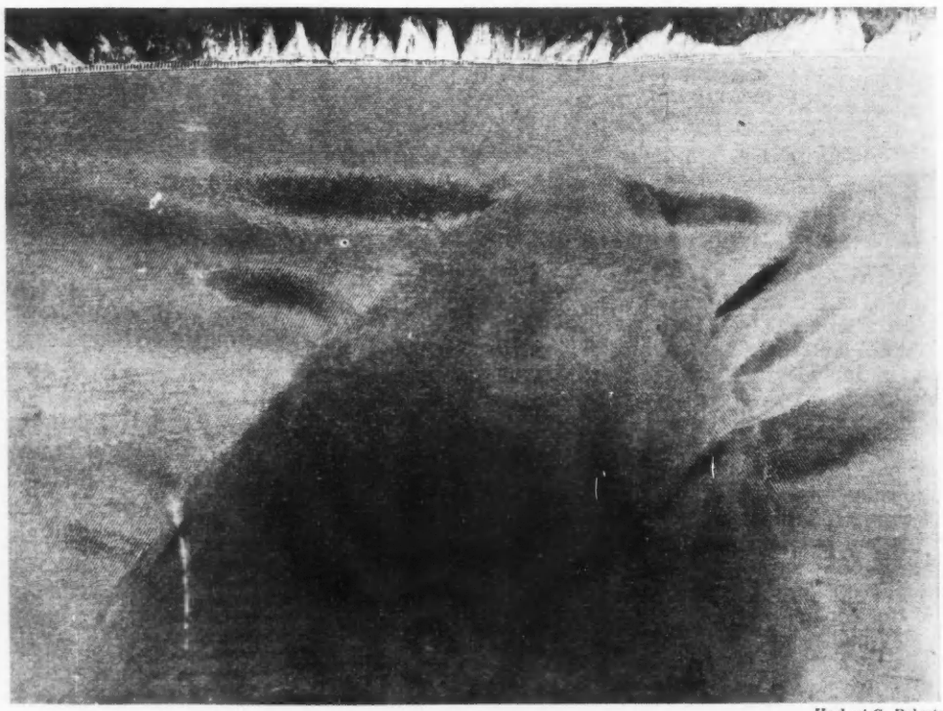
In the manufacture of acetate yarn, cellulose is commonly acetylized to the extent of about 54% of its actual capacity to take up the acetate radical. Chemists found that by reducing this to approximately 45% by the action of sodium hydroxide, a very satisfactory product can be produced which will stand a much higher temperature than will the original fiber. If, however, the reaction goes further than this, the alteration is too great, and in extreme cases the fiber is weakened to the point of worthlessness. The saponification is brought about by immersing the fabric in a solution containing about 6% caustic soda for the necessary length of time. This treatment causes a partial splitting off of the acetate groups and a replacement of the hydroxyl groups; and thus tends to turn the material back to the orginal cellulose. Manipulation of saponification demands careful control for consistent results.

Methods Used

There are three general methods of saponifying cellulose-acetate fabrics; the choice depending on the construction of the fabric. Very light voiles, unions, and crepes are best handled in a regulation silk boil-off tub about 5 ft. long, 12 ft. wide, and 5 ft. deep. The goods are desized in a light soap bath and rinsed. Then they are lifted out of the tub, and a solution is made up containing 6% of caustic soda based on the weight of the dry fabric. When the solution has been thoroughly mixed, the goods are placed in the tub and worked slowly back and forth on the sticks, from which they are suspended by linen strings caught in the selvages. The solution in the tub is titrated with N/1 sulfuric acid by the man in charge, and the temperature is raised to 160 to 170° F. After 15 min., the liquor is again titrated; when a slight decrease in the reading will be noticed. In the table below will be found typical titration readings taken from actual mill operations:

0 minutes.....	29.0 c.c. of N/1 sulfuric acid required
40 minutes.....	13.0 c.c. of N/1 sulfuric acid required
60 minutes.....	3.0 c.c. of N/1 sulfuric acid required
70 minutes.....	0.8 c.c. of N/1 sulfuric acid required

After 70 min. this particular lot was passed as "Iron-proof," although under ordinary circumstances it will require from 1½ to 2 hr. to insure even results. In saponifying by this method, the reaction progresses very slowly at first, and then accelerates. Therefore the operator must take care not to let it go too far, and in



Herbert C. Roberts

Fig. 1. Effect produced by touching a cellulose-acetate fabric with a hot iron. Contact with the iron has shrunk the cloth, made it stiff, and left a permanent impression

addition to making the titrations, regularly takes samples of the goods and submits them to an actual ironing test. When a sample withstands a temperature of 500° F. for 10 seconds, the lot is considered to be iron-proof. The goods are rinsed immediately and sent to the dyehouse to be dyed.

It may be said that the degree of saponification obtained up to this point will not appreciably affect the dyeing properties of the cellulose acetate. That is, fabrics which have been iron-proofed may be treated in the dyehouse exactly as normal fabrics.

In this method of saponifying, two precautions must be taken in order to produce even results. First, the tub must not be overcrowded or overloaded, and secondly, there should be practically constant movement of the goods in the liquor. In a 12-ft. tub, at least 3 ft. should be left free to allow for the movement of the goods. As stated previously, it usually requires about 1½ to 2 hr. to iron-proof fabrics by this method. It is not advisable to try to reduce this time by increasing the concentration of the caustic soda, as saponification may be uneven. When saponification is uneven, the dyeing, likewise, will be uneven.

Iron-proofing also may be accomplished on a regular winch dyeing machine. For some of the heavier fabrics this method is quite satisfactory; flat crepes, for example, are often saponified in this way. Titration and testing are carried out as described above. Approximately the same length of time is required as before, but the amount of caustic may be reduced to 4%. By adding ½% of soap, figured on the volume of the dye liquor, dyeing may proceed at the same time. If the shade is not matched when iron-proofing is complete, ammonium sulfate is added to arrest the saponification; and dyeing is continued until the shade is matched.

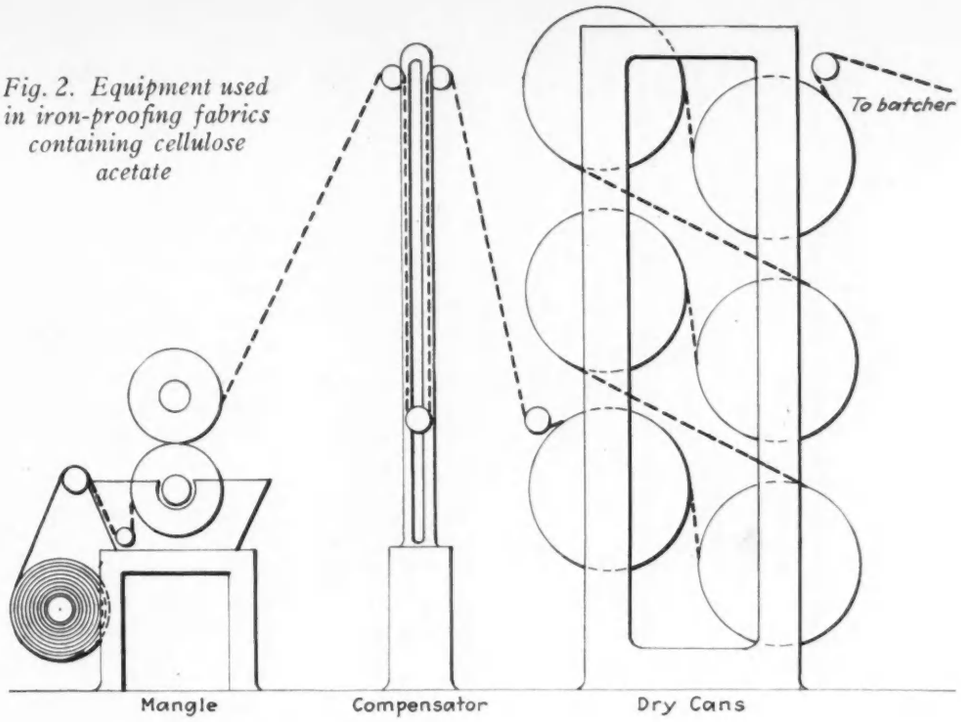


Fig. 2. Equipment used in iron-proofing fabrics containing cellulose acetate

Simplified Process

A method which is generally applicable to a wide range of fabrics of medium and heavy weights, makes use of a mangle and set of dry cans. By saponifying in this way, stringing, plaiting, and desizing of the fabrics are eliminated; and, in addition, a greater production is obtained. This process is protected by the Celanese Corp. of America for use on fabrics containing Celanese.

The latest type of equipment used in this method is shown in Fig. 2. It consists essentially of a heavy two-bowl water mangle, a counterbalanced compensating gate, and a set of dry cans. The mangle bowls may be both rubber covered, the lower one of a harder texture than the upper one. The softer top roll assures a good nip. Pressure is applied by the usual compound leverage, which roughly exerts about 1-ton pressure across the goods. The mangle box should be lined with a non-corrosive metal, or made entirely of this metal. The compensator must run freely in the guides, and must be counterbalanced to within a few pounds of its own weight, so as to avoid undue tension on the cloth passing through the machine.

The stack of dry cans may be vertical or horizontal, depending on the room available for installation. The cylinders must be made of a metal or alloy capable of resisting hot dilute solutions of caustic soda, and the seams must be finished as smoothly as possible so that they will present no irregularity to the goods. In operation, the newer machines are synchronized by means of a device attached to the compensating gate, which suits the speed of the mangle motor to that of the dry-can motor.

The goods to be processed by the mangle and can method are generally sewed into batches of approximately 1,000 yd., although the size of the batch may vary in different dyehouses. The fabric is taken to the mangle without further treatment, passed under the roll in the box containing a cold 5.5% solution of caustic soda, up through the nip, over the gate, and onto the dry cans. After they leave the cans, the goods are batched on rolls or plaited into boxes. Despite its apparent simplicity, the method requires skillful operation to produce satisfactory results. Some of the possible causes of trouble and the steps necessary to eliminate them are as follows:

Eliminating Difficulties

First, caustic soda has a tendency to remove the size as the goods pass through the box. This gradually accumulates until a point is reached where the cloth carries as much size out of the box as it had when it entered the box. Therefore the liquor should be changed every 1,000 yd. or so, and it is convenient to have a constant change of liquor by inlet and overflow pipes. The importance of this will be seen if we next observe the effect of the liquor charged heavily with size on the dry cans. Gradually an accumulation of dry sizing material will appear on the first two or three cans, and may

Herbert C. Roberts

Fig. 3. Results of uneven saponification caused by an accumulation of dirt on the dry cans

in turn loosen and deposit on the goods as little specks which are extremely difficult to scour off. Another possible consequence is uneven saponification due to uneven heat distribution. Results of uneven saponification are shown in Fig. 3. Any accumulation of gelatin or other sizing materials should be washed off the cans at least once each day.

Second, the nip on the goods must be heavy enough so that the goods, when viewed at an angle do not show any area which looks definitely wet or shiny. This is most important, as upon the evenness of the padding, depends the levelness of the dyeing to follow.

Third, no threads left by passing seams should be allowed to remain on the mangle roll or dry cans. These will always cause an over-saponification where they have met the goods, with resultant resists produced in dyeing. There is also a definite delustering effect which is far from desirable. This fault is so common that it is almost imperative to mount a long brush so that it will bear on the top roll and catch all loose threads, which may then be removed by an operative. Most of these stray threads, for some reason, attach themselves to the top roll, and several yards of cloth may be damaged before the defect is noticed. If these threads are not removed, one single thread may ruin 30 to 40 yd. of fabric before it is finally worked out of the machine by the action of the squeeze roll and the caustic.

Fourth, the goods must be delivered absolutely dry from the stack of cans. This means that the slower portions to dry, such as the seams, must be also dry. If they are not wholly dry, saponification will continue in the roll, and the goods will continue to be saponified where these wet seams press against the rest of the fabric. This will produce a bar effect for several yards on each side of the seam, which will take the dye unevenly.

Although some free caustic is probably left in the dry goods, there is no reaction, however, as long as the goods remain dry. They may remain rolled up indefinitely before drying, with no adverse results.

Since the entire saponification effect takes place in a very short time, the speed of the operation depends almost entirely upon the drying capacity of the cans for a given weight of fabric. Fabrics weighing 6 yd. to the pound may be run at the rate of 30 yd. per min. with nine 24-in. dry cans heated with a steam pressure of 2 to 3 lb. With a greater number of cans, the speed may be increased to any practical rate consistent with good-quality work.

The dyer and finisher who is familiar with the tendency of cellulose acetate to deluster when boiled, may think that the contact with the hot cans will produce a delustered finish; but actually this is not so, as the time is not sufficient for this to take place, even though considerable stream is generated on the first three cans.

Nothing should be spared to make the equipment as nearly perfect as possible. This applies to the mangle rolls and cans in particular. Imperfections in the rolls, such as high spots or hollows will cause irreparable damages; dents and blemishes in the cans will have the same effect. Foreign matter on the cans and mangles must be watched for and removed whenever noticed; otherwise much grief will be encountered from this source. If these precautions are taken, saponification by the pad and can method will give little difficulty.

"Sheep-to-Suit" in About Two Hours

AS A preliminary to the Imperial Wool Industries Fair which is being held in Bradford, England, from July 3 to 18, a "sheep-to-suit" record of two hours and 10 minutes was set up on June 24 by a Huddersfield firm. On the previous day a firm at Batley had set up a record of three hours and 22½ minutes, breaking the record of six hours and four minutes set up by Thomas Kitson in the United States in 1898.

The record of June 24 was made by John Crowther & Sons and Prices Tailors, Ltd. The cloth made was an 18½-oz. sports tweed, 55 in. wide, made of 52s quality wool. About 20 lb. of raw material was used which was shorn in less than 10 minutes from 12 South Down sheep. Sorting was eliminated by shearing only the quality required. Half of the wool was dyed for the filling and the other half was left undyed for the warp. The yarns were mulespun and the cloth was woven in two-yard lengths simultaneously on two looms. The lengths were sewn together for the subsequent finishing processes.

Each loom was tended by six male weavers and one girl who burled and mended the cloth as it was being woven. Both lengths of cloth were woven in 18 minutes. When this process was concluded, one hour and 15 minutes had elapsed since the wool had left the sheeps' backs. After the cloth had been finished, it was taken in hand by 40 workers and several supervisors and in 29½ minutes was transformed into a suit.

The suit thus made has been on display at the fair in Bradford and will be worn by J. H. Thomas, Colonial Secretary, on his forthcoming tour of Canada.

Pyroxylin Replaces Slack Warp in

New Pile Fabric

THE pyroxylin-treated pile fabric recently patented by William S. Nutter, Sanford, Me., and acquired by the Sanford Mills, has become well-established as an automobile upholstery plush. The patent, No. 1,778,196, applies to "a warp-pile fabric, and especially a plush fabric of the so-called V-weave type in which the pile warp threads are of mohair or like slippery fiber." The patent covers both the fabric and the manner of making it. The process appreciably reduces both weaving and material costs.

Pile fabrics may be divided into two major classes, which are commonly referred to as the W-weave type and the V-weave type. In the W-weave, each pile loop is securely tied or anchored into the body of the fabric because of the fact that it loops about a plurality of filling threads. In the V-weave fabric, however, the pile loops are much less securely anchored, each pile loop being held by only one filling thread. It is to this latter class that the patent applies.

In the weaving of the V-type pile fabric, it has formerly been necessary to employ three separate warps —a regular ground warp, a pile warp, and an extra or "slack" warp (also known as "binding" or "binder" warp). The slack warp, as the name indicates, is under little or no tension and, during the weaving operation, becomes bound into the body of the fabric and thus assists in holding the V-shaped loops in place. It will readily be seen that the use of so many warps, especially in the case of a double pile fabric, for which there are likely to be nine threads per dent in a 22s reed, will present considerable trouble in weaving. The crowding of the threads interferes with proper shedding and there is more opportunity for warp breakage.

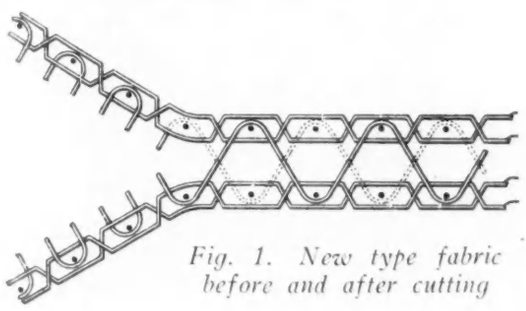


Fig. 1. New type fabric before and after cutting

In the new method, the "slack" warp is eliminated entirely and the binding of the threads is accomplished by means of a light pyroxylin coating (or other flexible binding material) applied to the back of the fabric. It has been asserted that this coating ties the V-shaped pile-loops into the fabric more firmly than do the loose or slack warp threads of the extra warp which have hitherto been used. The weight of the pyroxylin coating approximately equals that of the discarded warp threads so that no change is made in this respect. It is also stated that there is no change in the number of V-piles per unit area.

Another item of interest lies in the fact that the operations of dyeing, scouring, washing, etc., have no effect on this pyroxylin-coated fabric. On the other hand, it is claimed that the coating has a beneficial effect because of the fact that it counteracts any distortional tendency. The loops are prevented from becoming loosened or pushed through the back of the fabric.

The omission of the slack warp makes it possible to divide the tensioned warp between two beams, thereby permitting the use of a tensioned warp of double the previous length. This will reduce the stoppage time, since the tying-in of a new warp will occur less frequently. Then again, less power will be consumed in weaving and the loom may be run at a faster rate.

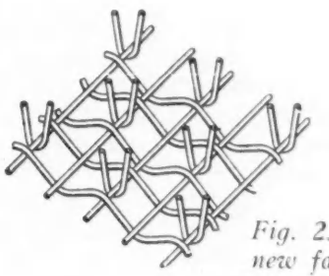


Fig. 2. Perspective view of new fabric as initially woven

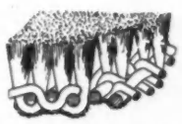


Fig. 3. Completed fabric

The cost of producing this pyroxylin-coated fabric is stated to be considerably less than that of the old type because of the following factors:

1. A reduction in stoppage time of the loom required for drawing-in and/or tying-in the warps.
2. A reduction in the cost of the material used because of the omission of some 5,000 warp threads contained in the "slack" warp. (The cost of pyroxylin coating is considerably less than that of an equal weight of yarn.)
3. Faster operation of the loom.
4. Less weaving time lost in piecing up broken ends.

The pyroxylin coating is applied after the fabric has been cut. This coating will preferably be thin and film-like, and will not appreciably obscure the texture of the back of the fabric.

Fig. 1 illustrates diagrammatically the V-weave with the extra warp omitted as in the new fabric. Fig. 2 is a perspective view illustrating, more or less diagrammatically, the new fabric as it is initially woven. Fig. 3 is a fragmentary perspective view of the completed fabric.

The invention, therefore, may be considered as a V-weave, warp-pile fabric, initially woven with a subnormal number of warp threads required to bind the pile V's into the fabric, occasioned by the omission of the slack warp threads heretofore used for this purpose; this deficiency of warp threads being counterbalanced by the application of a thin, film-like coating of pyroxylin to the back of the fabric after it is woven.

Why the Commerce Department *Seeks Publicity for Its Findings*

By Dr. Julius Klein
Assistant Secretary of Commerce

◆ *One of the arguments we have used, in recent years, in supporting our belief that Governmental bureaus, and the Department of Commerce in particular, have been of steadily increasing help to American business, was the fact that valuable information developed at considerable expenditure of tax-payers' money and formerly consigned exclusively to rat-proof and peep-proof files in Washington offices, is now made available, in interesting form, to the people who pay for its compilation. Consequently it is amusing, to express it mildly, to learn that this phase of the Government's work has been distorted into a basis for criticism.*

No one resents unwarranted extension of Government into private business more than do we. But we see clearly many ways in which Government aid is indispensable. One function at once apparent, is the development of accurate information on world trade, information whose compilation is beyond the resources of any one firm or any one industry. Having compiled such data, is it not equally the function of the Government to make sure they become available to as large a number of tax-payers as possible?

Dr. Klein answered that question, forcefully but with more restraint than we would have used under the circumstances, in a radio talk, which is abstracted on this page.—EDITOR.

IF WE look fairly at the federal structure, we cannot but be struck by the fact that a very large part of its machinery has been created for the sole purpose of being helpful to its citizens. Nothing shows that so clearly as a classification President Hoover made recently of our total federal budget expenditure this year, which amounts to about $4,120,000,000. Here are its chief divisions: 1. The military items, namely, two and a half billions to take care of the nation's war debts, payment of war pensions, and maintenance of defense for the future. 2. The expenses of law enforcement, law making, and such things, accounting for nearly 379 million dollars. 3. What we might call the productive, promotive group of outlays, running to more than 500 million dollars for the year, devoted to aids to health, education, agriculture, industry, commerce, and transport by land, water, or air.

Now, is a good part of this half-billion dollars squandered, as some isolated critics assume, by brazen, self-seeking bureaucrats, or wasted on silly, futile publicity of no public interest or value? That is the charge; what are the facts?

Let me instance the federal division in which I serve—the Commerce Department. For one thing, about five-sixths of its activities have nothing to do with the regulation of people's conduct. The big work is in the gathering and distribution of industrial and commercial information, because that has proven itself to be the best way in which to foster and promote general economic welfare—not to tell people what they ought to do but to give them the facts and let them make their own plans accordingly.

This business depression from which all our world has suffered was caused primarily by poor judgment as to conditions and prospects—and the judgment of men cannot be better than the information on which it is founded. You may ask why the business people of our country cannot compile their own information on most of the subjects now covered by the Government? Well, in the first place, the Government with its disinterested purpose in the majority of cases can collect and compile data on those specialized topics more efficiently than any private concern; it can call for wide scientific and academic cooperation; at much more moderate costs than those faced by private agencies, it can push business investigation and inquiry all around the world, with diplomatic facilities to back them up. Then, too, remember that tens of thousands of business firms do not belong to chambers of commerce or trade bodies and, therefore, would not benefit by the latter's investigations. Finally, it is very much to the common interest that adequate and current facts be supplied for the general public and not kept for the advantage of a few well-organized business groups.

Attacks on the circulation of government information make a responsible official share the feelings of that mother who undertook to show her small son through a picture album. One of the views represented a band of Christian martyrs, huddled in the arena of old Rome, upon whom the lions were being loosed. At this, the youngster gazed, and then burst into tears. "Why, Johnny, you musn't cry over that," his mother expostulated. "It's just a picture from long ago. Nobody's being hurt now." "But, mamma," the boy replied between sobs, putting his finger on one of the pictured beasts which was being crowded aside by the outrush of its bigger mates, "there's a little lion in back there that isn't going to get any Christian!"

Now, the tears of the more rabid critics of the occasional oddity among the thousands of Governmental publications are being so absurdly poured over the wrong objects that I despair of furnishing any consolation. Here, for example, is the Commerce Department (and the same can be said of others) engaged by law in costly investigation and research, coming into possession regularly of facts with rather extraordinary money values. Everybody who contributes to Government upkeep is entitled to share in those values.

I am not exaggerating when I say that scores of times every single week we on the staff of the department are asked by business men who have just discovered some new aspect of its facilities why we do not make more of an effort to let the business community of the nation know of these exceptional resources of valuable information.

I grant you that there are instances of obscure, apparently trifling data unearthed and circulated. But for every publication of a bulletin on frog-legs, or gold fish, or toy balloons, there are a hundred of wider value. It gets pretty close to myopic malice to focus on a single triviality and magnify and distort it as characteristics of the whole. Also, it is easy to toss a jeer at some of these tiny, odd industries which contribute to the complexity of our America, but jeering does not gainsay the fact that even the littlest of them engages the livelihood of hundreds, often thousands of people.

Here is another typical misstatement. It is alleged that federal expenses in distributing information are excessive. As a matter of fact they are exceedingly small as compared with expenditures on investigation and collection of the facts involved. Consider as an example the Fifteenth Census, conducted at a cost in round figures *(continued on page 74)*

In looping and other departments orderly transportation of goods eliminates confusion and saves time

If Shoes, Why Not Stockings?

By F. R. Winwick

◆ *A boss knitter, on visiting a certain shoe factory, noted an interesting method for keeping goods on various orders separate and intact during a series of manufacturing operations. On returning to his mill, he applied the system to the manufacture of hosiery with beneficial results, as noted in the accompanying article.*

WHEN we first began to knit stockings on the old hand "Branson" machines, in the early '90s, the room boy came around each morning to pick up our previous days work, which he threw into a big basket. Since there were very few styles, all of one gauge, they were thrown in at random and taken to the loopers, where they were sorted for color, each girl getting so many dozens of dark work and an equal allotment of the lighter colors. After looping, the goods were placed in the baskets and taken to the rough mending department, where, after being mended and inspected, they were sorted and placed in racks by styles.

Finding that the bottoms of the baskets wore off too fast, we had some sturdy box trucks built of hard wood. These were replaced, years later, by well-made fibroid boxes, which were much lighter to handle and less liable to become roughened and damaging to the work.

With all the marvelous development of knitting, both in seamless and the full-fashioned hosiery, we still cling to our old ways of handling the work as it comes from the knitting machines. With the introduction of many varieties of yarn, of an almost endless number of gauges of needles, of scores of fancy stitches, and of fancy color patterns, we have become adepts at mixing and sorting, and we are quite happy if we can get a case out of the factory without making more than one even order for it.

A boss knitter once visited a shoe factory and noticed that each workman had a case of shoes in a rack on wheels. Each rack had an extra shelf; and, as each shoe received its operation, it was returned to a different shelf from that on which it arrived. It seemed to be an orderly process, and each case was complete when it left the operative.

With the consent of his own superintendent, the knitter adopted fibroid boxes for the same purpose. These would hold about 30 dozen ladies' stockings. Ticket holders were attached to the ends of the cases, and the regular dyehouse tickets were placed in them to show just what the cases were to contain. As the goods were knit, they were placed in the cases according to the case tickets. It was required of the seaming and looping department that the cases should be passed on in turn to the rough-mending room, containing the same goods as when they were received. When the goods were mended and inspected, they were ready for the dyehouse and could go through in one lot without any delay. Formerly, weeks were sometimes required for stray dozens to come dribbling through from the seaming department. The orderly packng at the knitting department also helped in checking errors made by the knitters, and sometimes a shortage could be corrected before the yarns were removed from the knitting machines.

It was found that weeks were saved on the delivery of small orders, test lots, even orders, and samples. In this manner shipments could take preference over stock orders. The expense of setting up machines and making small even orders to replace goods which were sure to be found later, was saved. Delays for lost dozens which were formerly buried under a mass of work were entirely eliminated.

Indigosol Colors

Increase in Number and Importance

By Olin A. Saunders

INDIGOSOL colors have ceased to be scientific curiosities in the textile field and are steadily gaining in importance for printing textiles. They are particularly valuable in dress-goods finishing, because their fastness properties are such as to justify their use. This is also true in drapery printing. They make possible, likewise, a line of fast colors for warp printing, since the goods can be printed, woven, and later developed. Use of the Indigosols, in fact, has many possibilities and provides a means of escape from a number of the problems encountered today in the modern print works.

Chemically, Indigosols are the sulfuric-ester salts of the leuco-compounds of indigoid, anthaquinone, and alizarin indigo vat dyestuffs. They are soluble in water and are capable of being oxidized to an insoluble dyestuff by treatment with suitable oxidizing agents, the fastness properties depending greatly on the method of oxidation. The Indigosols are very stable to atmospheric oxidation, but in powder form and in solution are susceptible to the action of light, possibly due to some oxidation caused by ultra-violet radiation. The rate of solubility of Indigosols in hot water is increased in every case upon the addition of Cellosolve, Durit-O, and certain other solvents. A small addition of concentrated hydrosulfite also increases the solubility, but this is not recommended.

Application of Indigosols

There are two distinct methods of applying Indigosols to cotton, the after-development method and the steam method. The former is the better known of these methods and usually is considered the most practical. In this method, the color is printed on the cloth in paste form and oxidized later by a short passage through an acid bath. There are three processes under this classification: the nitrite, the bichromate, and the ferric nitrate process.

In the nitrite process, the dyestuff is dissolved in hot water and two to four times as much solvent as dyestuff by weight, depending on the Indigosol used in each case. The dissolved color is stirred into a paste containing cornstarch and gum tragacanth. To this mixture is added sodium nitrate in proportion to the amount of dyestuff. After printing and drying, the goods are passed through a developing bath containing 4% of sulfuric acid and 3% of ferric chloride for 10 sec. at 170° F. It is essential that this temperature be maintained as a minimum.

The bichromate process follows the nitrite process closely so far as dissolving the Indigosol and mixing in the paste medium. However, there is no further addition of oxidizing agents to the printing paste. After printing and drying, the goods are passed through a developing bath of 3% bichromate of soda and 4% sulfuric acid for 10 sec. at 107° F. One disadvantage of this method is that both Indigosol Green AB and Black IB are not developed fully in the presence of bichromate of soda.

The ferric nitrate process is the latest innovation in the after-developing method, giving by far the brightest and fastest shades. It requires the addition of neutral chromate of soda to the printing paste. After printing and drying, the goods are developed in 4% of sulfuric acid and 2% of ferric nitrate for 10 sec. at 180° F. It is also possible to develop by a short dip in the developing solution and skying for 30 sec.

The ferric nitrate process gives brighter and faster shades than the other processes; but due to the addition of an oxidizing agent to the print paste, this paste will not keep more than two or three days, the color oxidizing in the paste medium. The bichromate process gives very good results; it cannot be used, however, when Green AB or Black IB is present. The nitrate process has none of these disadvantages, but the prints are not as bright or as fast as with the ferric nitrate method. In all cases where iron salts are used, it is necessary to wash the goods in dilute oxalic acid to clear any yellow tint in white grounds.

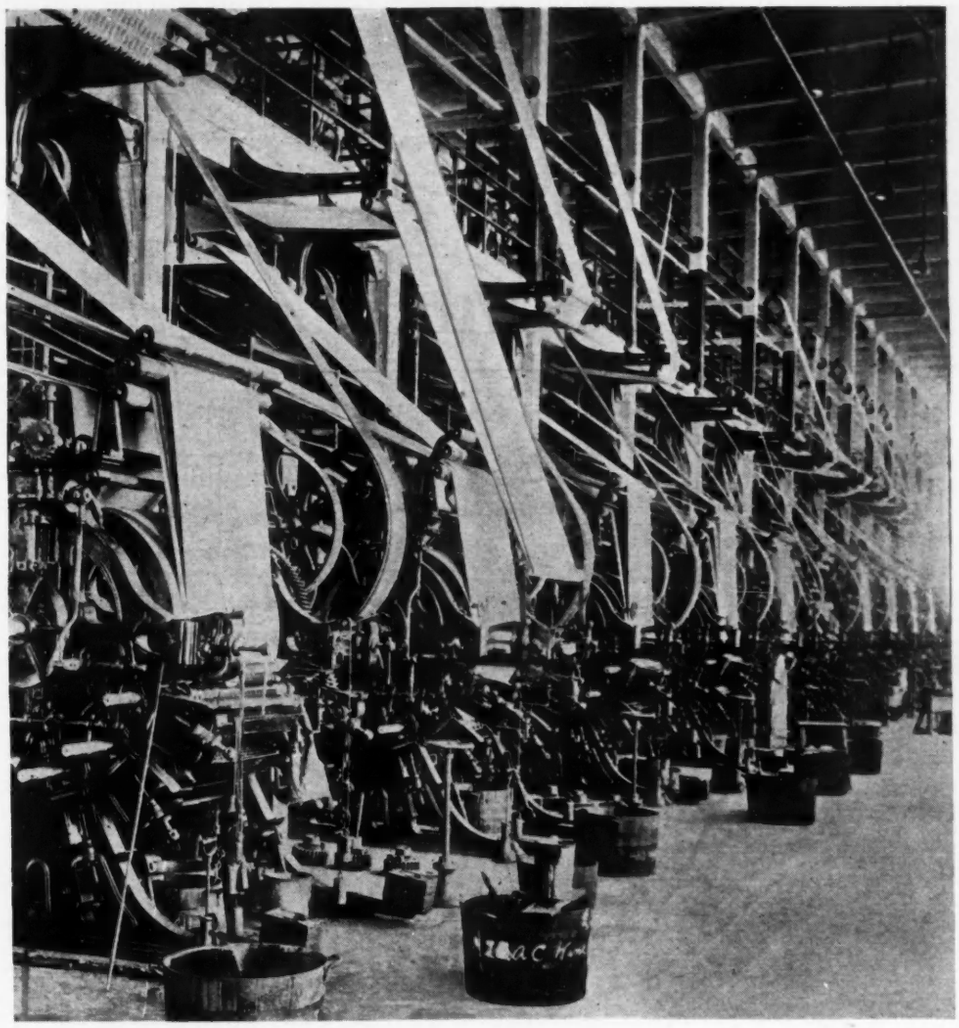
Steam Method

Distinct from the after-development process, is the so-called steam method, in which the oxidation of the dyestuff is brought about in the color and paste mixture.

In the steam method, sodium chlorate, ammonium vanadate, and sulfocyanide of ammonia are added to the printing paste, and the print is developed by a short passage through a continuous ager. The vanadium salt acts as a catalyst, and the sulfocyanide provides an acid condition necessary for oxidation. This salt, however, remains neutral until steamed, when sulfocyanic acid is split off.

This method provides a means of using with the Indigosols, those dyestuffs which are affected by an aftertreatment with sulpfuric acid. In each case, the proportions of chlorate, vanadate, and sulfocyanide vary with the dyestuffs.

A typical procedure is as follows: 12 parts of Indigosol is dissolved in 30 parts of solvent; and 12 parts ammonium sulfocyanide (1:1), 8 parts sodium chlorate (1:1), 2 parts ammonium vanadate (1:10), and 200 parts starch-tragacanth paste are added. The print is dyed, steamed for 5 min. at 205 to 208° F., and then soaped at a boil with 1 oz. per gal. of soap for 5 min.



Battery of textile printing machines at work on patterns using multicolor effects

Results from the steam method are very good; but on the basis of cost comparison with the after-development method, show to decided disadvantage, because all of the color value of the Indigosols is not obtainable. The printing paste made up with the various oxidizing agents and assistants will not remain without precipitation for more than a day. However, this method does make it possible to obtain shades with commercial or Alizarin colors.

Discharge Printing

Although the Indigosols are in themselves dischargeable with hydrosulfite (sodium sulfoxylate formaldehyde) with the addition of Leucotrope W, it is possible to use them as discharge colors on diazotized and developed or direct grounds. The amount of hydrosulfite necessary to discharge these grounds does not affect the Indigosols appreciably, although the practical application in this line has been accomplished mostly on silk and rayon.

Resist Printing Under Aniline Black

No practical way has been found to resist aniline black with Indigosols. In laboratory experiments, it has been found that aniline black can be resisted when zinc oxide and sodium acetate are added to the printing paste. No oxidizing agents can be used, as the black will develop in the aging box, and affect the shade of the Indigosol. Also, the color value of the Indigosol is decreased as the amount of the sodium acetate is increased. Hence, it is obvious that the only way possible is to strike a balance and keep the sodium acetate used to a minimum (approximately 5%). In the experiments, the Indigosol paste was printed on cotton. The goods were dried, padded through an aniline black solution, dried, and aged for 3 min.; then passed through a bath containing 4% of sulfuric acid and 3% of bichromate of soda for 10 sec. at 115° F. The results were only fair, but showed a possibility for future research and practical use.

Indigosols and Vat Prototypes

The following is a list of some of the better-known Indigosols, with their vat prototypes when known:

Indigosol Violet AZB, derivative of Alizarine Indigosol Violet B; Indigosol O4B, derivative of Ciba Blue 2B or Tetrabromindigo; Indigosol AZG, derivative of Alizarine Indigo G; Indigosol OR, derivative of Indigo MLB/R or Brom Indigo; Indigosol O, derivative of Indigo; Indigosol Orange HR, derivative of Helindone Orange R; Indigosol Pink IR Extra, derivative of Hydron Pink FF; Indigosol Black IB, derivative of Thio Indigo Black B or Helindone Printing Black RD; Indigosol Scarlet HB, derivative of Helindone Fast Scarlet B; Indigosol Yellow HCG, derivative of Helindone Yellow CG; Indigosol Brown IRRD, derivative of Indanthrene Printing Brown RRD; Indigosol HB, derivative of Helindone Blue B; Indigosol Red HB, derivative of Helindone Red B; Indigosol Red Violet IRH, Helindone Red 3B; Indigosol Green AB; Indigosol Golden Yellow IGK, derivative of Indanthrene Golden Yellow GK; and Indigosol O6B, derivative of Indigo MLB/6B.

More recently have been brouht out Indigosol Printing Blues IGG and IB, and Indigosol Blue AGG. Shades produced with the Indigosols have the same fastness properties of those obtained with the corresponding vat colors, and it is often possible to get a better yield with the Indigosol than with their prototypes.

Adjusting the Full-Fashioned Hosiery Machine

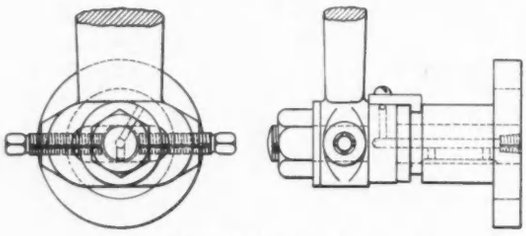


Fig. 40. Roller adjustment

By M. C. Miller, M. E.

Mechanical Engineer, Manville, R. I.

◆*Never before has anyone had the courage to undertake the stupendous task of analyzing and describing for publication in accurate detail the intricate movements and adjustments of full-fashioned hosiery machinery. In the second section of Mr. Miller's series on full-fashioned hosiery machines, which begins herewith, diagrams painstakingly drawn to scale and explanations carefully and clearly written provide full-fashioned hosiery readers with an invaluable guide to the correct adjustment of their machines. These who have not followed the series thus far will find this a good place to begin it.*

WE HAVE described in articles appearing in this publication from time to time, the general operation and design of cotton-type full-fashioned hosiery machines; and we shall now describe and illustrate with large, accurate drawings the exact movements of the knitting elements and the relationship between the various sets of elements.

As previously noted, all of these movements are transmitted to the elements by levers and links operated by cams. The cams are bolted to flanges which are rigidly fastened by set-screws to a single rotating camshaft extending throughout the machine length.

Circumferential Adjustment

In Fig. 39 are shown the camshaft 1 and one of the flanges 2, with its bolts 3. Also shown are levers, links, and other shafts and elements. There are two of the bolts 3 for each cam assembly, and each cam is made in halves for easy removal. The bolt holes of the two cam halves are considerably larger than their bolts to allow for circumferential adjustment. The machine builder usually provides a gauge for setting the juncture of the two cam halves circumferentially in proper relation to the juncture of other cams, all cams of one type being thus set alike or in line. The circumferential cam-setting gauge is graduated and marked so that it can be lengthened or shortened for the different sets of cams. The circumferential setting of all these cams is a very accurate one; for if any duplicate cam of a particular motion is not set circumferentially exactly like a similar cam, a twisting of the shafts 4, 5, 6, 7, or 8 will result. The particular shaft which will be thus twisted depends of course on the particular series of cams that are out of circumferential adjustment with each other.

The circumferential adjustment of each group of cams to all other groups is, of course, also very important, as the movements of the three elements involved in knitting must function in close relation to each other. An intelligent use of the gauge previously mentioned makes possible the necessarily close adjustment of the cams on their flanges—or of the flanges on the camshaft in case the flanges have not been correctly fastened to their shaft.

The position of the cams lengthwise of the camshaft is also very important, as an equal portion of the cams must project on each side of their rollers, in order that the rollers will run centrally. Care must be exercised to see that the rollers do not have too great an end play and that the camshaft-shifting mechanism holds the shaft within close limits endwise.

All of the levers for the various motions are provided with adjustments, as shown in Fig. 40, so that if the cams of each group are alike and are properly set circumferentially, it is possible, by making use of the lever adjustments, to set each individual group of elements exactly like the other groups of the same motion. It will also be seen in this drawing that the roller hub or center is a separate piece from the roller rim. This type of construction is used in order that the rim may be made of hardened steel, shrunk to its hub, which is of cast iron. The hub runs on a hardened-steel stud. All rollers in the machine are so constructed in order that they will turn freely and will not have flat spots worn on the rims if a roller should for any reason fail to turn in its rolling action on its cam.

As some of the cams, which are made of cast iron, may wear differently from others, there are further provided adjustable steel cam portions at the accurate and more readily wearable points of all cams, as shown in Fig. 41. It is not intended to make use of these adjustments except when uneven wear alters any one of the cams, or unless some very unusual situation exists which cannot be remedied by the previously described circumferential cam and lever adjustments.

All the motions for performing the knitting functions have numbers of like cams, as previously noted. A usual exception is the stitch-regulator motions, although in some modern machines these have also been placed at least in duplicate, as is very desirable, in order

Previous installments of this series appeared May 31, July 26, Oct. 4, and Nov. 29, 1930; and March 21 and April 25, 1931. As the diagrams included in this installment will be referred to in later installments, the reader is advised to preserve this number until the remainder of the series has been published.

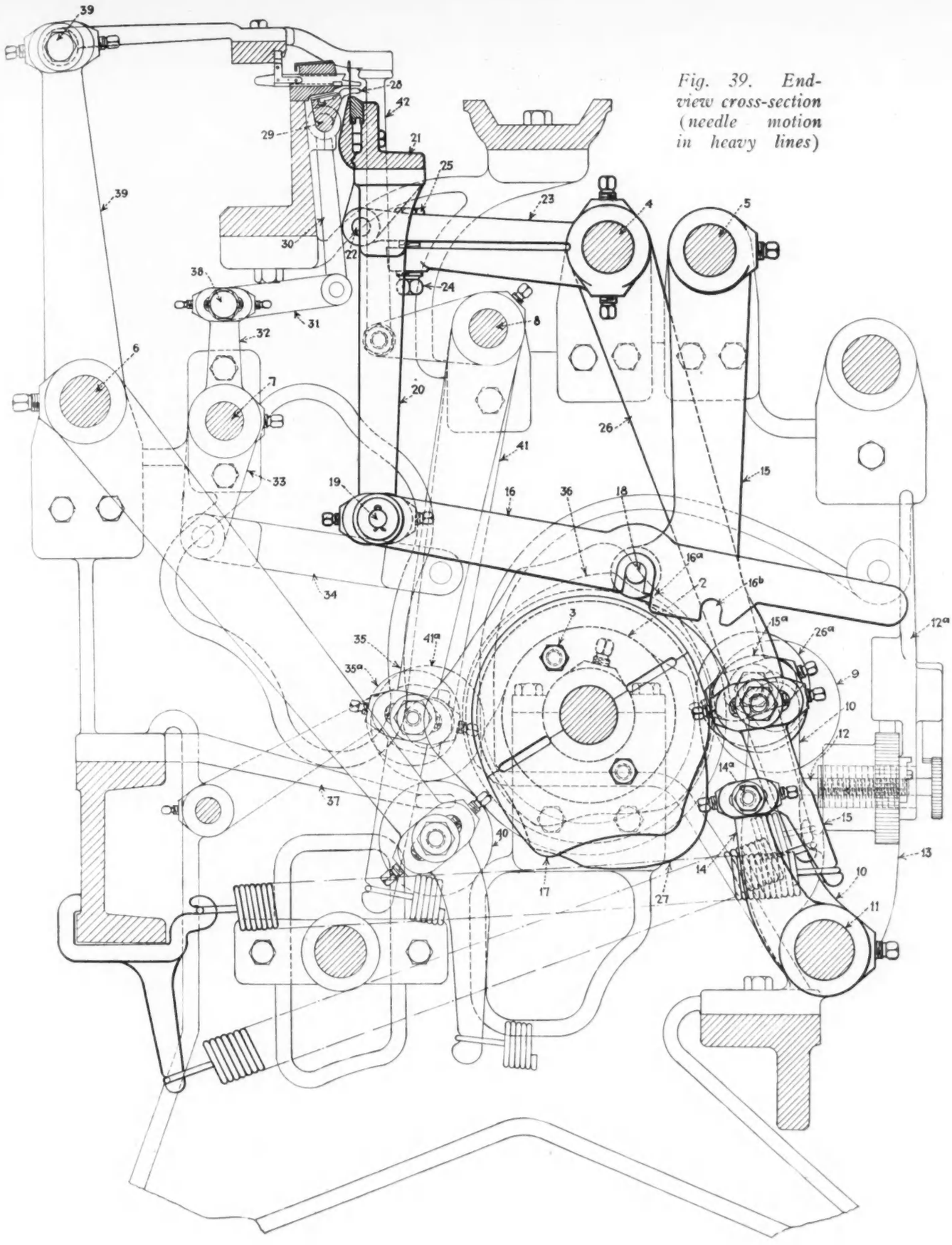


Fig. 39. End-view cross-section (needle motion in heavy lines)

to insure that a like amount of yarn is being kinked at all the sections of the machine. In the great majority of machines, however, the stitch-regulator motion is caused to operate only from one cam located nearly centrally on the camshaft length.

A roller 9 (Fig. 39) rides on this stitch cam, and is carried by a lever 10, which is mounted free for adjustment on the stitch-regulator shaft 11, a collar preventing it from moving endwise. This lever contacts with a pin 12 manually adjustable in and out, which is carried by a lever 13. The last-mentioned lever is rigidly fastened to the regulator shaft 11. The motion of the

stitch-regulator cam is transmitted to the stitch-regulator shaft 11 through the adjustable pin 12 of the lever 13. This makes possible the transmission of a slight oscillation to the shaft 11, the degree depending on the position of the pin 12, which may be moved in and out by means of the hand lever 12*a*.

To this shaft 11 are rigidly fastened at intervals—one for each in-and-out motion of the needles—members known as lever-acting presser-cam levers 14 (Fig. 39), which transmit through their pins 14*a* the rocking movements of the regulator shaft to the needle-in-and-out motion. An adjustment for this movement has been provided by mounting adjustably in each respective lever 14, the projecting pin 14*a*. Each lever 14 and projecting pin 14*a* underlies its respective lever 15, which through the rocker link 16, permits the needles to be moved and adjusted to and from the sinker motion. The needles may thereby be set either toward the sinker motion, allowing more yarn to be kinked around them, or away from the sinker, permitting less yarn to be kinked.

The regular shaft is also fitted with other levers, which function similarly to the regulator lever 10, only that they are not usually fitted with the pin 12 for adjustment. These levers can, when their rollers are against the surfaces of their cams, cause a periodical and, if necessary, part-course variation in the amount of yarn being sunk around the needles. Means are provided for manually placing these special regulator levers into action, or mechanism is provided for causing the timing-chain mechanism to place them into action for the desired number of courses, as when loose coursing or producing reinforced portions of fabric. Ordinary regulation of the regular plain-stitch fabric, however, is performed by the lever 13.

The rollers 15*a* of the levers 15 must not, by contacting with their cam peripheries, interfere with the complete control of the needles by the regular motion during the yarn sinking. At this time these rollers are opposite a true circumferential portion of their cams. Therefore, this portion of the cams is made sufficiently small in radius to prevent the rollers of the levers 15, with the tightest possible stitch adjustment, contacting with their cams during the yarn-sinking period. The entire needle-in-and-out motion at this time rests against the levers 14 of the regular motion, the rollers of the levers 15 contacting with their cams only after the yarn sinking is finished. After this, the rises of these regular needle-in-and-out cams will control the in-and-out movements of the needles. In other words, the in-and-out position of the needles during the yarn-sinking period is under the control of the regulator shaft, its levers, and its cam or cams; and thereafter the needles are controlled by the series of levers 15 and presser cams 17.

The needle-in-and-out motion is therefore transmitted to the shaft 5 by the rollers 15*a* contacting with the press cams 17. The levers 15 are rigidly fastened to this shaft 5 and are fitted with the pin 18, to which is removably hooked the link 16. The object in shaping the link as shown is to enable the operator during the turn-welt transfer to rock each two needle sections outward slightly by lifting the link and resting the pin 18 against the shoulder 16*a* and to rock the needles out still further by placing the pin 18 in the slot 16*b* for the purpose of removing broken needles or replacing them. The other ends of these links 16 are connected with their pins 19 to their respective needle-bar forks 20, there being one such fork for each two sections or for each needle bar. This fork is rigidly fastened to its needle bar 21; and, as the needle bar is hinged at the ends at 22, an in-and-out motion can be transmitted to the needles. Suitable adjustments are provided at 19 for individually setting each needle bar independently of the previously noted stitch-regulator adjustment.

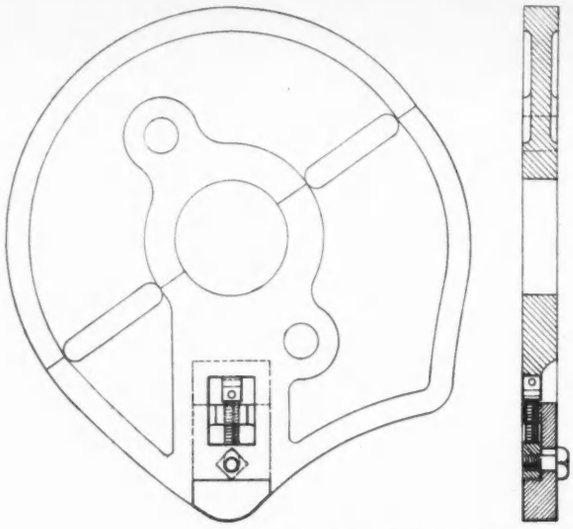


Fig. 41. Needle-in-and-out cam, including adjustable portion

◆Many readers have inquired as to when the series of articles by Mr. Miller on the past, present, and future of knitting mechanism, which ran in TEXTILE WORLD from 1926 to 1929, would be available in book form. The book has now been issued, under the title "Principles of Knitting," and copies may be obtained from the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York.

The up-and-down motion of the needles is transmitted through levers 23, which are fulcrumly connected to the hinges 22. These levers are formed split, as shown, so that by holding the lower screw 24 and turning the upper bolt head 25, the up-and-down position of the needles can be altered. This adjustment is not intended to be used for a normal up-and-down needle adjustment, its object is to level the up-and-down position of the needles, there being two levers 23 for each needle bar.

The levers 23 are rigidly fastened to the shaft 4, which has at intervals rigidly fastened to it, the levers 26. The latter are fitted with their rollers 26*a*, acting on their cams 27. An adjustment is provided for moving any one of the rollers 26*a* to and from its cam to alter the up or down position of the needles.

Fig. 39 also shows the levers and cams for the other knitting elements. The other motions are purposely drawn in light lines to permit the eye to follow the needle-motion parts readily.

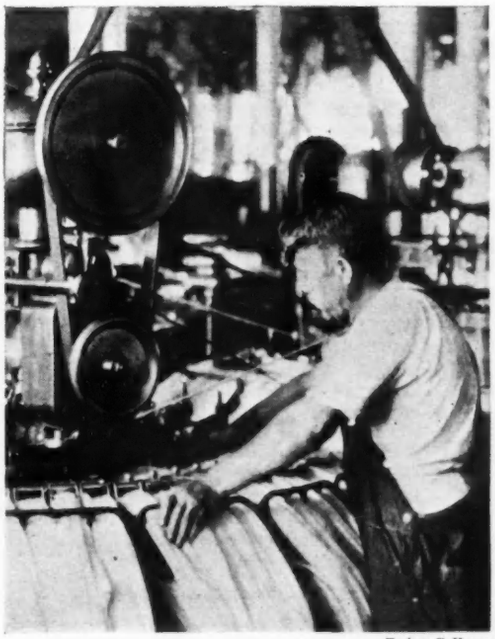
Upon further study of this drawing, it will be seen that the knock-over bits 28 are clamped in their bar, which is fulcrumed on pins at 29. To one of these pins is rigidly fastened a depending lever 30, which is connected with a link 31 to the lever 32. There is one such system of levers and links for each section.

The levers 32 are rigidly fastened to the shaft 7, to which is fastened at intervals a number of levers 33. These are connected with *(Continued on page 69)*

Many Factors in Early Worsted Processes Govern

Noilage

◆ *Certain inquiries received by our Questions and Answers Department from time to time seem to indicate a rather general lack of understanding of all the factors which govern the amount of short fiber removed by the worsted comb. The most recent of these questions concerns the effect on noilage of dyeing worsted stock before combing. The accompanying article has been written mainly to answer this specific inquiry, but the writer has endeavored also to explain the effect of certain other factors on the percentage of noil.* (7538)



Ewing Galloway

Each mill seeks a minimum percentage of noil from its combs

THE ambition of every comber is to so comb wool that only neps and foreign impurities will be rejected. Every fiber having two free ends is looked upon as potential top, which explains why each mill adoptes a system of manufacture that produces a minimum percentage of noil.

The system adopted depends upon the treatment given to the wool before combing—in the gilling, carding, scouring, and sorting departments. Each one of these preliminary processes affects tremendously the ultimate yield of top and the percentage of noil.

In the sorting process qualities are separated; undesirable material is removed; and, for worsted sorts, shorts are removed. The more thorough the removal of shorts, the less will be the noil in combing. A mill that allows carelessness in sorting obtains a greater yield of a certain sort or quality of sorted wool, but later obtains an increase in the percentage of noil and a top with a shorter average staple. Why? Because this short fiber easily felts during scouring, pills and forms neps in carding, and increases the difficulties in gilling.

The results obtained in scouring are dependent upon the skill and knowledge of the scourer, the materials used (cleaning agents), the hardness of the water, the temperatures and condition of the liquor in each bowl, the condition of the wool as it reaches scouring, and finally, but not the least important, the production demanded.

Forced scouring and quick drying are enemies to the conservation of spinning qualities and are friends of the noil pile because of the difficulties experienced in the carding process.

The action of the card is severe because of its crudeness and the violent method used to obtain separation of the fibers. The opening of the staples is fraught with evil. The results are dependent upon the skill of the carder; the speeds, clothing, and dimensions of the various rolls and cylinders; the production demanded; and the condition of the scoured wool. This condition, in turn, is dependent upon the sorting, the scouring, and the opinion of the carder regarding the proper amount of moisture and percentage of oil (if any) applied to the wool after scouring. The evidence is accumulating; it is apparent that whatever goes through the card must be treated in the gilling.

Good gilling previous to combing, by arranging the fibers in parallel order, influences the amount of noil obtained from the comb; but good gilling cannot make all short fibers long enough, when straightened and paralleled, to pass into top; nor can it control the neps present in the sliver. Whether the gilling, followed by combing, should precede dyeing, or whether the carded sliver should be sent direct to dyeing, is dependent upon the factors which have been explained in the brief discussions of the processes preceding the comb. It is also dependent both upon the method of dyeing and its successful application. These factors combined and briefly stated, are (a) the condition of the sliver previous to dyeing, and (b) the condition of the sliver after it has been dyed.

Most mills have found it to be better practice to dye after combing. Generally, wools finer than 3/8s (56s) are recombed after dyeing. Some mills do not recomb the dyed 56s quality. If it were possible, every mill would certainly dye its fine wools in the card ball to avoid the expense of recombing. In one test a worsted mill obtained the following results on 60s–64s quality.

(a) Top dyed and recombed.
First combing, 18% noil
Second combing, 3½% noil

(b) Card sliver dyed in ball.
Single combing, 35% noil.

A second mill has stated that a similar test on a 56s quality gave 15% total noil for two combings, as against 27% noil from stock single combed and dyed in the card sliver.

Many mills prefer to dye after combing, even when recombing is not necessary, because of two important factors: (a) the noils are white and (b) there is 10% to 13% less stock to dye.

Is the Way Out to Be Found in Fundamental Textile Research?

"IT IS inevitable that any discussion of a fundamental research program for the textile industry will be colored by the commentator's participation in it. The writer mentions this not to lend weight to his own comments but rather to decry the need of eloquence on a subject, the facts about which need no embellishment. Indeed, fundamental industrial research is as over-emphasized in discussion as it is neglected in fact," states Wallace Miller, publicity manager of the U. S. Testing Co., in *Testing*, a bulletin issued by that company.

"The hue and cry for a co-operative movement in the textile industry is of long standing. Let us review briefly some of this past agitation for it in order that we may have a better perspective in re-opening the discussion.

"'Nothing can kill a project so quickly as the slightest suspicion of self-interest. No one mill, no testing company, no publication, can properly start the ball rolling. Such a mill might be regarded as seeking individual application of the research discoveries made; such a testing company might be suspected of striving for a semi-official connection, with increased business for itself; such a publication might be criticized as seeking publicity—and subscribers.

"'It is an industry job and worthy of the efforts of the best men in the industry. There come to mind a score or more such men who have shown by their words and deeds an appreciation of the need of fundamental textile research. These are the men who eventually must put their feet under the same table and translate thought into action.

"'And the textile industry, the second greatest industry in the country, stands pat on most of its time-honored imported premises. It watches depression come and go—or stay, as is true at present; it gets excited over the tariff, over labor legislation, over foreign competition—but it dismisses with a shrug this paramount issue, paramount in comparison with even these important problems.

"'The formation of such a committee we recommend to all the textile associations as their most vital job and as an obligation they owe to the industries they serve.'

"The above is quoted from an editorial which appeared in the July 26, 1924, issue of TEXTILE WORLD. Had it appeared this past week the only difference would have been that it could have been written with increased justification and greater conviction.

"Those of us in the textile industry who have from time to time urged, in our several ways, definite activity along these lines usually come to a stone wall termed 'practicability'—the fetish of the textile industry. It is disheartening, at times, the pride that some executives take in their 'practicability' which usually amounts to nothing more or less than an inability to see beyond the obvious. These same executives use 'tradition' to justify their course, forgetting that if the industry as we know it has a respectably long tradition it is only because of the revolutionary steps taken by Arkwright and others that the modern machine age, of which textile industry is a decaying part, came into being.

"It is an obvious thought but bears repeating, that a disproportionately slow progress is in reality no progress at all but a retrogression. The industries which have passed the textile one are without a significant exception the outgrowth of purely scientific research followed in turn by practical application and invention. This becomes increasingly evident as time goes on. The support given to fundamental research by these more progressive industries is a glowing tribute to its commercial potentialities.

"If it be true that textile fibers do not readily lend themselves to instrumental and mechanical analyses in routine testing, it does not follow that their possibilities for research are limited or unduly difficult.

"The progress already made in silk and the synthetic fibers hints of the potentialities inherent in all textile fibers. Indeed, the complexities present are the greatest argument for fundamental research as opposed to superficial investigation.

"The formation of an organization for this purpose is a grave necessity. I say grave, advisedly. The interjection of personalities is essential and inevitable. With it goes the assumption of great responsibilities.

"Fundamental textile research needs direction for its activities, a free exchange of information and the practical application of its results. This calls for both initiative and restraint. No central organization can hope to be the only fountainhead of ideas or the criterion of their value. Such an attitude would be the nullification of the only purpose for which it should be organized.

"Its value both in fact and in extent will be as great and only as great as its ability to synthesize all the work being done and to make this available to all.

"Our problem is neither pleasant nor easy. It is fraught with headaches and heartaches. Its obstacles are not only ignorance but cupidity. Most important of all, our work will never be finished. Each completed step will be justified if it be only a beginning, however crude, in the desired direction.

"To have a sustained research program, it must be a definite part of the industry proper and not an isolated group too easily severed from the source of its support. It is not, to be sure, a matter for individual companies but must be so close to them that they will provide for it in their budget as a matter of course, feeling it to be a matter close and essential to them.

"Scientific management is the outgrowth of scientific research and its only justification. This can be assured by a constant interest being maintained in this work by those executives whose co-operation is essential to its success. Then the results will be absorbed naturally and easily without the inevitable educational campaign as a new problem at the end.

"Incidentally, the present plight of the textile industry assumes the aspect of a national menace. With more people gainfully employed in this industry than any other, our problem presents a greater challenge to our ingenuity, courage and foresight than ever before. If this picture is emotional its answer is not. Unhurried, scientifically sound, co-operatively sponsored and supported research is the way out. Its need is immediate and imperative and further delay can only be construed as an unwillingness and not an inability of the textile industry as represented by its leading executives to do their part in these dark hours of industrial depression."

Cotton Money

Galveston (Tex.) Chamber of Commerce urges U. S. Treasury Department to consider advisability of making one dollar bills of cotton material. Advantages claimed are greater durability than the linen and silk thread paper now used; possibility of frequent washing; elimination of danger of "raising" denomination of the bill; and utilization of a considerable quantity of the staple.

It is pointed out that dollar bills, owing to the hard usage experienced, are not now washed; when returned to the treasury they are destroyed. This is not true of larger denominations, the Chamber states.

Incidentally, Galveston has applied for copyright on name "cottonjamas" for cotton pajamas.

▸ Three Ways Cited to Make Rayon Profitably

Asserting that the rayon industry at present "is probably operating at a loss," the current issue of Textile Organon, published by Tubize Chatillon Corp., suggests three possible ways in which this situation may be rectified during the next few months: first, an increase in prices; this is regarded as unlikely in view of raw silk prices; second, weak and inefficient producers may go bankrupt or may be purchased by stronger producers; third, the reduction of manufacturing costs by economies in plants.

Organon comments that, while the merger or purchase of companies is possible, the reduction of overhead costs is the most likely course that producers will pursue to increase profits. It adds: "The rayon industry has not spent as much time or money on developmental work in the past ten years as it will in the next ten years. The old machinery and methods used to make yarn at a profit and no undue amount of concern was evidenced over

research. With the formation of new companies and the building of new plants, however, the older companies swung into a research and developmental era which will increase in scope and intensity during the coming years."

▸ Silk Water Route Time Cut to 28 Days

Direct all-water shipments of raw silk from the Orient to Hoboken, N. J. were given impetus by the arrival at Hoboken, recently, of the Sanyo Maru, O. S. K. liner, in the record time of

Sanyo Maru unloading silk after making the Yokohama-New York run in 28 days

Moving raw silk by tractor from dock to warehouse

twenty-eight days from Yokohama. The Sanyo Maru carried 3,000 bales of silk consigned to the warehouse of the United States Testing Co., at Hoboken, by various leading importers.

An innovation in handling the bales was made by the use of tractors and trailers to carry the silk from the dock to the warehouse. Each trailer held 50 bales of silk and two or three trailers were attached to the tractor. The movement from the dock to the warehouse was through a private right-of-way, under constant surveillance. This made possible a considerable reduction in time, which was further aided by the ease in unloading the silk from the trailers, a matter of four minutes. The silk was in the warehouse, ready for reshipment within a few hours after it was discharged by the steamer.

Riverside & Dan River Mills Diversifying Products with Success

From TEXTILE WORLD'S *Southern Office*

DEVELOPMENTS at the Riverside & Dan River Cotton Mills, Danville, Va., because of its size and importance, are watched with particular interest throughout the industry. During the labor disturbances last year the Danville organization received a great deal of attention, both favorable and unfavorable, in the daily newspapers of the country. Recent action of the mills' board of directors in passing the semi-annual dividend on $7,500,000 6% preferred stock, which was considered advisable in order to maintain the cash position of the company, has stimulated much discussion concerning the future of the large mill organization since the death of H. R. Fitzgerald, former president and treasurer.

This year the Riverside & Dan River Cotton Mills have devoted considerable attention to the diversification of their products. Whereas the company operated as many as 7,000 looms on ginghams alone but a few years ago, changing style trends made it necessary to introduce several new fabrics, including carded broadcloths and novelty shirtings, in the Riverside & Dan River lines. The success of this program is indicated by the fact that volume of sales for the week ending June 27 was the largest experienced by the company in about 20 weeks.

The Riverside & Dan River Divisions, when operating at full capacity, normally employ about 5,000 operatives. Many departments are now on full production schedules and it is understood that several of the weekly pay-rolls since the 1930 strike have included more than 4,000 names. Additional evidence of the increasing demand for cotton goods is seen in the fact that the Danville mills closed only one day in observance of the Fourth of July.

The future management of the Riverside & Dan River Cotton Mills has been the subject of considerable speculation in recent months. James I. Pritchett, Sr., veteran Danville banker, who was senior vice-president of the mills until Mr. Fitzgerald's death, has acted as president and treasurer since that time. Malcolm K. Harris, attorney for the mills, with whom Mr. Fitzgerald conferred upon legal matters during the 1930 labor disturbances, was elected assistant to the company's president and treasurer.

Robert R. West, who was named vice-president and production manager on March 1, 1930, as the present manufacturing head of the organization is generally regarded as the most likely candidate for the position of president and treasurer when Mr. Pritchett retires. For several years' prior to its liquidation, Mr. West was secretary-treasurer and agent of Lancaster Mills, Clinton, Mass., and it was in that capacity that he attracted the attention of Mr. Fitzgerald who was looking for a young executive of proven ability.

George P. Ray, vice-president and sales manager, with offices in New York, and W. W. Ayers, secretary, continue in positions which they have held for several years. George W. Robertson, general superintendent, likewise remains in charge of manufacturing at both the Dan River and the Riverside Divisions.

▸ Merion Worsted Mills Make Important Changes

Important changes are noted in the organization of the Merion Worsted Mills, West Conshohocken, Pa., spinners of French-spun worsted yarns. At a recent meeting of the board of directors, C. Herbert Harrigan, president, was granted six months vacation. James H. Purdy, who became vice-president, as noted last February, was elected to the board, and was also placed in active charge of the plant. James F. Degnan was appointed superintendent of the mills. John Harrigan, vice-president in charge of sales, has resigned. John Purdy, who has been associated with Joseph E. Duval, Philadelphia, has become connected with the sales department.

In the past, this mill has specialized on French-spun worsted knitting yarns. These yarns will be continued, but in view of the extensive experience of Mr. Purdy in the weaving industry, the mill is now spinning a line of weaving yarns. The range in both knitting and weaving yarns will run up to 60s, single and ply. Additional equipment consisting of 14 twisting frames, 200 spindles each, is now being installed, bringing this equipment up to 29 frames. The mill is now running full, and the billings for the month of June were the best for the last three years, showing a very satisfactory condition.

▸ Hold Intercomparison of Seriplane Readings

An intercomparison of seriplane readings on China raw silk has been arranged between New York China silk inspectors and Shanghai inspectors as a means of standardizing inspection methods of the two markets, the Silk Association of America, Inc. reports. To help Shanghai inspectors get into line with New York inspectors, samples of 13/15 and 20/22 China silk, representing the range of the New York market have been tested and the same skeins will now be sent to Shanghai to be inspected in that market.

NEWS about MEN

✦ JULIUS W. CONE, president of the Revolution Cotton Mills, Greensboro, N. C., was re-elected president of the North Carolina Traffic League at the annual convention held at Raleigh. W. S. CREIGHTON of Charlotte was chosen secretary of the organization.

✦ W. S. PEPPERELL, who was re-elected president of the Southern New England Textile Club on June 20, is president and treasurer of the Hebron Warehouse & Processing Co., Hebronville, Mass. This company warehouses and processes cotton waste and handles the entire waste product of a number of mills cooperatively. The report of the S.N.E.T. club meeting in our June 27 issue gave Mr. Pepperell's former business connection which had terminated at the close of 1930.

✦ G. K. SWAIN, who resigned recently as manager of the Collar City Finishing Co., Troy, N. Y., has been elected president of the newly organized Reynolds-Swain Corp., New York.

✦ L. M. O'MELIA, head of O'Melia Silks, Fonda, N. Y., is convalescing from injuries received in a recent motor accident.

✦ EDMUND W. MONTGOMERY, E. W. Montgomery Co., Greenville, S. C., was elected to membership in the New York Cotton Exchange on July 2.

✦ B. B. GOSSETT, Charlotte, N. C., president of the Chadwick-Hoskins Co., has leased the home of R. H. BOYER, in Biltmore Forests, Asheville, N. C., for the summer.

✦ PERCY ROBERTS, the remaining partner of Rickert & Roberts, Ltd., Montreal, Que., Canada, has purchased the share of the senior partner, W. J. RICKERT who died recently, and will continue the business.

✦ GUSTAV A. OBERLAENDER, secretary-treasurer, Berkshire Knitting Mills, Reading, Pa., has just received the Leibniz gold honor medal for furthering German science. This honor was conferred by the Prussian Academy of Science for his financial assistance of the German Archaeological Institute in Athens. Mr. Oberlaender has made many generous contributions to German science and education, recently donating a fund to Heidelberg University to enable American students to study there, and establishing the $1,000,000 Oberlaender Foundation to secure closer American-German cultural relations. Mr. Oberlaender is now in Germany, where the presentation was made, and plans to stay there for some time.

✦ JAMES L. HERRING was recently elected secretary and treasurer of the Alabama Braid Corp., Gadsden, Ala.

✦ F. M. OWEN is now secretary of the Berthdale Mills, Inc., McComb, Miss., manufacturers of silk, rayon and cotton novelties.

✦ ARTHUR EMERY, Charlotte, N. C., who has been connected with the Griffin (Ga.) Mills, was recently appointed general manager of Brookside Mills, Knoxville, Tenn. He was formerly general superintendent of Aragon-Baldwin Cotton Mills, Chester, Rock Hill and Whitmire, S. C.

✦ ROBERT A. BARTLETT, until recently secretary and treasurer of Priscilla Mills, Inc., and formerly treasurer, Acushnet Mill Corp., New Bedford, Mass., has been named plant manager of Hampton Textiles, Inc., the new yarn mercerizing and finishing concerns which will be established at Gastonia, N. C.

✦ HOWELL CHENEY, of Cheney Brothers, South Manchester, Conn., has been appointed to the Unemployment Commission of Connecticut by Governor Cross.

✦ J. L. NELSON, Lenoir, N. C., treasurer of the Caldwell, Hudson, Lenoir, Moore, Nelson, and Whitnel cotton mills, celebrated his 80th birthday recently.

✦ J. W. CURRY, JR., recently became secretary and treasurer of the Lavonia Mfg. Co., Lavonia, Ga.

✦ H. E. MACHOLD, vice-president of the Skenandoa Rayon Co., Utica, N. Y., has been added to the directorate of the Marine Midland Corporation of Oswego.

✦ CHARLES ELLIOT WARE, a director of the Fitchburg (Mass.) Duck Mills, and Mrs. Ware, celebrated their 50th wedding anniversary at their summer home in Lunenburg, Mass., on June 30.

✦ MILTON ENSOR, manager of Wilbur Cotton Mills, Troy, N. C., also southern representative of the Van Gelder Yarn Co., accompanied by Mrs. Ensor, has motored to Atlantic City, where he will spend a brief vacation.

G. A. Oberlaender, who received the Leibniz gold honor medal.

✦ W. A. CLEVELAND is now manager of Adams-Swirles Cotton Mills, Macon, Ga.

✦ W. A. HAAS, manager of the Chambersburg, Pa., mills of the Interwoven Mills, Inc., has received a letter from CLYDE S. BUCKINGHAM, supervising inspector of the Pennsylvania State department of labor and industry, congratulating employees and management of the mills on having completed the year 1930 without a single accident. The plant employs more than 100 persons regularly.

✦ L. ANDREW CASTLE, of Jantzen Knitting Mills, spoke at the meeting of the Advertising Club of Seattle, Wash., recently. It is his theory that advertising and merchandising are the cures for hard times. He also claims that the depression is due more to "depressed minds" and price-cutting than anything else.

✦ H. W. KELSEY, general sales manager since 1915 of Russell Mfg. Co., Middletown, Conn., has been promoted to take complete charge of the purchases of this company, according to announcement by DANIEL R. WEEDON, whose appointment as treasurer and general manager was announced recently.

✦ D. S. MCKENNEY will have full charge of selling men's wear worsted, mohairs, summer fabrics and other specialties for the Farr Alpaca Co., according to HENRY C. MARTIN, selling agent. Mr. McKenney was formerly selling agent for Sherman Textile Co.

✦ MAX K. BONTER, who has been with the Phoenix Hosiery Co. for 18 years has accepted a position on the sales staff of the Berkshire Knitting Mills, Reading, Pa. He will cover the territory from Denver, Colo., to the Pacific Coast. The addition of three other men, CARL A. LORENZ, DANIEL C. GILMARTIN, and HENRY P. ADAMS, to a junior sales staff was also made known.

✦ JOHN J. VALENZA, 1931 graduate of the New York Textile High School, was awarded the annual scholarship of the Textile Color Card Association. This prize will help toward his support for the ensuing year while he takes a post-graduate course in study and research in color at his own school. He will be required to write a thesis on this subject. The 1930-1931 recipient of the scholarship from the same school, MISS MARJORIE MCGOWAN, has submitted her thesis, "Color Action and Reaction." This year's scholarships, presented also at the Lowell Textile Institute and Philadelphia Textile School, mark the third annual awards made by the Textile Color Card Association.

✦ C. J. KING, of Williamston, S. C., was appointed a member of the committee on textiles at the recent conference on Industrial Education at Clemson College.

✦ HERMAN A. METZ prizes for various activities related to dyeing were awarded to four students of the New York Textile High School. They were presented at the high school commencement exercises as follows: to MARY GUCCIONE and RUTH HIRSCH, the Herman A Metz prizes for batik and dyeing; to JAMES ALEXANDER MILLS and LOUIS CONTI, the Herman A. Metz chemistry and dyeing awards.

✦ L. A. SHANNON, for the last 15 years Halifax, N. S., representative of the Linen Thread Co., Boston, Mass., has been transferred to Baltimore. His successor is H. L. OUTHOUSE, who previously represented the company in the State of Maine.

✦ SAMUEL TAYLOR, former superintendent of the Bristol Mfg. Co., New Bedford, Mass., has been appointed general superintendent of the Howard Arthur Mills, Fall River, Mass.

✦ BERT HOLLINGSHEAD, formerly with the Jasper, Ala., plant of the Alabama Mills Co., is now superintendent of the Fayette, Ala., unit of the company.

✦ GEORGE W. MELDRUM, who retired on July 1 as superintendent of the dyeing department of the Bigelow-Sanford Carpet Co., Clinton, Mass., after 54 years of continuous service, is passing the summer with his family at Cohasset, Mass.

✦ H. A. MURRAY is now superintendent of the Singleton Silk Mfg. Co., Augusta, Ga.

✦ W. B. SHUFORD was recently appointed assistant superintendent of the Highland Cordage Co., Hickory, N. C.

✦ THOMAS S. AIKEN, a 50-year employee of the Clinton (Mass.) Works of the Wickwire Spencer Steel Co., New York, has been retired on a pension.

W. S. Pepperell, who was reelected president of the Southern New England Textile Club.

✦ JOHN HENRY DULIN, who holds the position of chemist for the Wilson Finishing Mills, at Burlington, N. C., was married on June 30, to Miss Grace Bell, Guthriesville, S. C. Mr. and Mrs. Dulin will live in Burlington.

✦ E. H. PRATT, master mechanic of the American Enka Corp., Enka, N. C., and three other stockholders of the *West Asheville News*, have bought that paper. Mr. Pratt will continue with the Enka company and his three associates in the new venture will have charge of the paper.

✦ WALTER BROWNING, Rochdale, Mass., has accepted an overseer's position in E. E. Smith's mill, Worcester, Mass.

✦ NORMAN MACLAGAN, boss dyer for the George H. Gilbert Mfg. Co., Gilbertville, Mass., has accepted a similar position with the Stillwater Worsted Mills, Harrisville, R. I.

✦ GEORGE DODSON, formerly with the Clover Worsted Mills, Franklin, Mass., has accepted a position as loomfixer with the Holden-Leonard Co., Bennington, Vt.

✦ HARRIS MIDWOOD has resigned his position as finisher-percher with the Mayo Woolen Mills Co., Inc., Millbury, Mass.

Obituary

A. S. Cohen

A. S. Cohen, a pioneer among the cotton experts in the South, died at his home in Marietta, Ga., on June 29. He was a native of Savannah, and was identified for many years with the Inman cotton interests, serving in the capacity of an expert for the firm of Inman, Akers & Inman, from which he retired shortly after the World War. As an expert cotton grader and stapler, his opinion was the basis for the settlement of many controversies between the mills and factors both here and abroad, and he was often engaged in a consulting capacity, even after his retirement. Mr. Cohen took keen interest in the work of the Georgia School of Technology, with which he became associated in 1927, organizing the cotton stapling and grading course at the A. French Textile School in that institution. Besides the regular school year instruction, he organized a summer course for mill executives. Mr. Cohen served the Presbyterian church for more than 20 years as an elder. He had been prominent in civic and military circles since his youth, and had many friends among cotton mill men.

Henry Dexter Converse

Henry Dexter Converse, treasurer, former president and one of the owners of the Rayon-Worsted Woolen Mills, Monson, Mass., died suddenly at his home in Palmer, Mass., on June 30, after several months' illness of heart trouble. He was born in Palmer, in 1858, and lived there all his life, being the town's largest individual taxpayer. He purchased the former State Street Mill, Monson, with the late Joseph H. Loudon and the latter operated it until it was later taken over by the Rayon-Worsted Woolen Mills, which operated it until about a year ago. The mills were incorporated on Nov. 1, 1928, with Mr. Converse as president and treasurer. Mr. Converse was succeeded as president by William W. Buckley, Southbridge, Mass., but remained as treasurer. He leaves no near relatives.

John F. Street

John F. Street, senior partner of John F. Street & Co., Providence, R. I., died at his summer home in Hampton, Conn., June 27, after a brief illness, at the age of 74 years. Mr. Street had been associated with the textile industry during his entire business life. He started his business career as bookkeeper for the old Hope Thread Co., later forming the partnership of Eddy & Street, yarn brokers. In 1910, he formed the present company of John F. Street & Co. He was a member of all Masonic bodies, Pomham Club, To Kalon Club of Pawtucket and American Cotton Manufacturers Association.

Thomas Mitchell Clark

Thomas Mitchell Clark, aged 80, died this week at his home in Auburn, N. Y. after an illness of several weeks. He was born at Amesbury, Mass., Dec. 21, 1850. He went to Auburn from Sawyer Woolen Mills, Dover, N. H., in 1895 as superintendent of the Auburn Woolen Mill. He continued in that capacity until the mills were abandoned a few years ago. His father and grandfather were identified with the same industry.

Alfred Martini

Alfred Martini, aged 64, owner of the Martini Knitting Mills, Marinette, Wis., died June 23 following an operation. Mr. Martini founded the mills ten years ago, prior to which he was superintendent of the Marinette Knitting Mills. He is survived by his widow and daughter.

Richard S. Ligon

Richard S. Ligon, aged 64, vice-president of the Orr Cotton Mills, founder and director of the Bank of Anderson, S. C., philanthropist and former wholesale grocery merchant, died at his home in Anderson, June 26, following a short illness. Mrs. Ligon, two daughters and one son, survive.

Frank Strickland

Frank Strickland, superintendent of the Onawa Spinning Co. of Woonsocket, R. I., died June 26 at the Woonsocket Hospital after an illness of two weeks. He was in his 51st year. Mr. Strickland was a member of the Woonsocket Square and Compass Club and of various Masonic orders.

Charles W. Corey

Charles W. Corey, for many years office manager of the National Spun Silk Co., New Bedford, Mass., died recently at the age of 35 following an operation for appendicitis. Born in New York, he went to New Bedford 14 years ago, obtained employment as a clerk in the National Spun Silk Co. two years later and rose to the position of manager of the office.

Textile Calendar

Carolina Yarn Association, Second Annual Golf Tournament and Outing. (Place to be announced later.) Sept. 18 and 19, 1931.

National Association of Cotton Manufacturers, Annual Meeting, Providence-Biltmore Hotel, Providence, R. I., Oct. 7 and 8, 1931.

American Association of Textile Chemists and Colorists, Annual Meeting, Boston, Mass., Dec. 4 and 5, 1931.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

NEWS about MILLS

Cotton

Powdrell & Alexander, Inc., Danielson, Conn., have started their No. 3 mill in the former Connecticut Mills Co. plant on a schedule of eight hours a day.

Berkshire Fine Spinning Associates, Inc., Adams, Mass., are in operation again for the first time since the shutdown two months ago.

Naumkeag Steam Cotton Co., Salem, Mass., have closed their Pequot Mills and the Danvers Bleachery, Peabody, Mass., for the annual two weeks' vacation from July 6 until July 20.

Hind and Harrison Plush Co., Clarks Mills, N. Y., have reduced their capital stock from $2,000,000 to $1,010,000.

Harmony Mills, Cohoes, N. Y., will shut down from July 27 to Aug. 3 for the annual vacation period.

Pomona Mills, Inc., Greensboro, N. C., recently purchased a Hermas automatic shearing machine, with vertical brushing machine, through the Carolina Specialty Co., Charlotte, N. C.

Lonsdale (R. I.) Co., Blackstone (Mass.) Mill, shut down from July 3 until July 20, for vacations.

Belton (S. C.) Mills' slasher room was damaged by fire July 2, the loss being estimated at approximately $2,000, and it was announced that the destruction of slasher room machinery would necessitate a shut-down of about 10 days. The fire originated from a welding machine, it was stated.

Corsicana Cotton Mills, Corsicana, Tex., are arranging for resumption of a full time production schedule, with full working force, to be continued for an indefinite period.

***Planters & Merchants Mills,** New Braunfels, Texas, will be offered again at public auction by Ralph Durkee, receiver, in the near future. The District Court has disapproved of all bids recently received, holding that these were too low.

Canadian Textile & Weaving Co., Guelph, Ont., suffered to the extent of several thousand dollars in a fire which broke out on June 30. The plant had been operating with a full staff and will be tied up for some time.

Wool

Bigelow-Sanford Carpet Co., Thompsonville, Conn., closed June 29 for the annual inventory and will reopen July 13. Some departments will operate to get out production requirements.

American Felt Co., City Mills, Mass., has closed its branch plant there indefinitely, perhaps for good. The older employees have been placed on half pay for a period of six months while those who live in company houses will also be given six months' rent gratis, providing the houses are not sold.

Green River Co., Huntington, Mass., plans to start operations in the William E. Tillotson Mfg. Co.'s mill, recently purchased, West Pittsfield, Mass., after July 14. The Pittsfield Development Co. bought property and 100 acres not required in the plans of the Green River Co., for $37,000.

Ware (Mass.) Woolen Co., has received some excellent orders which will keep the plant operating at a full time capacity schedule until late fall. The plant had been operating on part time.

Coe Woolen Co., Worcester, Mass., has resumed operations after a month's shutdown.

Worcester, Mass. Dr. Ernest E. Smith, former treasurer of Smith Mills, Inc., Worcester, who later operated the Salisbury Mills, Inc., Manchaug, Mass., has started a woolen mill on Beacon St., Worcester.

Silver Creek Woolen Mills, Inc., Silver Creek, N. Y., had a loss on July 3 of more than $15,000 in plant and equipment as the result of a fire of undetermined origin.

Globe Mills, of American Woolen Co., Utica, N. Y., may shortly open its woolen department according to local report.

Caro Cloth Corp., Carolina, R. I., has filed notice of increase in capital from 210,000 to 300,000 shares of stock, no par value.

***Paragon Worsted Co.,** Providence, R. I., has awarded the general contract for the structural iron and steel for two-story mill addition, 26x50 ft., to the Providence Steel & Iron Co., Kinsley Ave., Providence. The general building contract has been let to E. Turgeon, Providence. This new unit is estimated to cost about $25,000.

Wakefield Textile Co., Wakefield, R. I., woolen manufacturers, plan to adopt a day and night schedule at once.

Angora Industries, Inc., A. C. Ullman, president, Snohomish, Wash., a co-operative organization, is raising funds by subscription for a proposed local woolen mill for the production of tweeds and similar woolen goods.

Guelph (Ont., Canada) Worsted Spinning Mills, have resumed operations again as the result of a higher duty upon yarns from England.

Knit

***Coopers, Ltd.,** Burbank, Calif., have awarded a building contract to the William P. Neil Co., Ltd., 4814 Loma Vista Ave., Los Angeles, Calif., for the initial unit of its proposed plant at Verdugo and Front Sts., Burbank, to be one-story, with part of the structure two-story, totaling about 20,000 sq.ft. of floor space. This will be the first of three units to be built on the site. Superstructure is scheduled to begin at once.

Fall City Knitting Works, Inc., 1562 Story Ave., Louisville, Ky., through their attorney, Joseph Lazarus, have filed a voluntary petition in bankruptcy in the United States District Court Clerk's office, listing liabilities at $26,297.02 and assets at $21,113.06. The assets included machinery valued at approximately $17,000.

Massachusetts Knitting Mills, Boston, Mass., are arranging for the installation of additional machinery at their mill at Columbia, Tenn., recently acquired from the Cadet Knitting Mills. It is proposed to double the former capacity of the plant, giving employment to a working force of close to 400 persons. Production will be given over to full-fashioned hosiery.

Prudential Silk Hosiery Co., Inc., Belleville, N. J. Milton M. Unger, recently appointed receiver for this company by the Court of Chancery, has been dismissed by Vice-Chancellor Church. Creditors have signified willingness to assist the company, and it will return to former management.

Chalmers Knitting Co., Amsterdam, N. Y., has resumed full time operations following a shutdown last week caused by the excessive heat.

Barnett Knitting Co., Inc., Fort Plain, N. Y., has been chartered, with a capital of $40,000, to establish and operate a knitting mill. The new concern is represented by L. B. Moore, local attorney.

Princeton Rayons, Inc., New York, through its affiliated organization, Starr Investment Corp., has purchased the mill of the Belding-Heminway Silk Co., at Watertown, Conn., consisting of several buildings with a total floor area of 85,000 sq.ft., on a 25-acre tract of land. The new owner is said to be planning to occupy the premises at an early date.

Asheville (N. C.) Silk Hosiery Mills, will increase its operating force from 129 to 250. The present operations will be doubled, it is said, under an extensive expansion program now underway.

Alderwood Knitting Mills, Portland, Ore., will move into a new location at 31st and Multnomah Sts., as soon as the remodeling on the 100x100 ft. building at that site is completed sometime in August. Office rooms, production department and shipping division will all be located in the new building.

Bower & Kaufman, Inc., silk hosiery manufacturers of Philadelphia, Pa., may transfer their entire manufacturing plant to Atlanta within a few months according to E. M. Kauffman, Jr., an official of the company. The company contemplates the erection of a single building at a cost of between $35,000 and $40,000 as the first unit. Further extensions will

**Indicates previous mention of project.*

depend upon market conditions and the expansion of the company. The initial unit, if constructed, will employ 250 operatives from Atlanta. Bower & Kauffman, Inc., use Japanese silk and manufacture a complete line of women's silk hosiery.

Miller-Smith Hosiery Co., Chattanooga, Tenn., which is located on the Hooker road, has obtained a building permit to erect a fence to cost $2,000.

Walter Fred Hosiery Mills, Inc., Nashville, Tenn., has increased its capital stock by selling $500,000 of preferred stock. Reason for selling the stock is the plan to double present equipment. Several 48-gauge machines and 20 new 45-gauge machines have been bought, some have been received and are being installed. Attachments have been bought for all of their machines for making nets, lace clocks, and fancy tops. Otto H. Lindenberg, Columbus, O., has moved to Nashville, and will be associated with this company as vice-president. This concern has opened New York offices in Empire State Building, with Arthur and Decial Mojo, brothers, in charge. A New York warehouse has been opened where they will carrv a stock of "Se-Ling" hosiery. Bernard Nieter and Harry Walton are also connected with the New York office.

*Grover **Knitting Mills, Ltd.,** 2019 Moreay St., Montreal, Que., has started work on a one-story $10,000 factory 20x 100 ft., of concrete and brick construction.

Herbert **Hosiery Co.,** Toronto, Ont., Canada, which began operations a few weeks ago at its Toronto plant, is now employing about 150 workers in the manufacture of woolen and silk hosiery. E. H. Kinfell is the manager. It is a branch of the Herbert Hosiery Co. of Norristown, Pa.

Silk

Corn Silk Spinning Co., Willimantic, Conn., has in operation 65 of the 75 machines installed. Eight more machines will be installed at once.

R. G. Buser Silk Corp., Wilmington, Del., has arranged for an increase in capital from 5,000 to 10,000 shares of stock, no par value.

Seaboard Silk Mills, Elberton, Ga., is now operating on a 24-hr.-a-day schedule, with a full force of operatives.

Silkcraft Mills, Inc., Paterson, N. J., recently organized with capital of 1,500 shares of stock, no par value, to operate a local broadsilk mill, will be represented by Abram I. Bluestein, 126 Market St., Paterson, N. J., an attorney. Incorporators include Louis C. Friedman and A. Weber.

Cortland-Gouverneur (N. Y.) Silk Mills have rejected an offer of $1,000 from that municipality for its water power rights on the Oswegatchie River.

Onondaga Silk Co., Inc., Ogdensburg, N. Y., has adopted a full time capacity schedule with full working force, on a 24-hr. day basis, and will continue on that schedule through July and probably longer.

*Indicates previous mention of project.

John Dunlop's Sons, Inc., Spring Valley, N. Y., have filed notice of a reduction in capitalization from $2,740,308.18 to $2,240,308.18.

Majestic Silk Mills, Inc., Allentown, Pa., have filed notice of an increase in capital from $25,000 to $250,000.

Lehigh Valley Silk Mills, Bethlehem, Pa. The plant is being revamped under the direction of Theodore F. N. Gray. It is planned to change about 100 of the present single-deck spinning machines to direct motor drive.

Revonah Silk Mills, Inc., Hanover, Pa., recently organized, have taken over the local mill and equipment of the **A. A. Silk Mfg. Co.,** on Polar St., an interest of the **Brilliant Silk Mfg. Co.,** Paterson, N. J. The plant has been closed since last March and will be reopened at once by the new owner, which proposes to develop maximum operations at an early date with a working force of over 150 persons. The new company is headed by Francis J. Muhling, Sr., and Francis J. Muhling, Jr., 123 Ridgewood Ave., Glen Ridge, N. J. The last noted will be president and manager.

Wellwood Silk Mills, Crossville, Tenn. Interior construction work on the Wellwood Silk Mills started June 30, and will be finished within a short time, according to the contractors. The silk mills will employ about 75 persons.

Rayon

Courtauld's, Ltd., Cornwall, Ont., are said to have contracted with the Fraser Companies, Montreal, Que., pulp and paper manufacturers, for a quantity of rayon pulp. The Athol mill of the Fraser Companies' subsidiary, the Restigouche Co., Ltd., has been placed on a capacity six-day week schedule.

Canadian Celanese, Ltd., Drummondville, Que., Can. Deliveries of rayon from the plant are more than double those for the same period in 1930. The new dye plant is now in full operation, and additional looms are being installed.

Finishing

***Associated Dyeing & Printing Co., Inc.,** Paterson, N. J., has purchased Plant No. 5 of Fabrics Finishing Co. at Newton, N. J., from the equity receivers of the company, according to an order signed by Federal Judge Guy L. Fake on July 1. This transaction disposes of the last of the plants of the Fabrics Finishing Co.

Collar City Finishing Co., Troy, N. Y., has been taken over by the Reynolds-Swain Mfg. Co., of New York, and production of sheets and pillow-cases will be increased.

***Sands Springs (Okla.) Textile Mills, Inc.,** new bleachery has been started by W. R. Grimshaw Co. It is understood that the building and equipment will cost $50,000. Chicago Bridge & Iron Works were awarded the contract for the steel tanks. Roberts Filter Mfg. Co., Darby, Pa., will furnish the filters, and the Permutit Co., New York, were awarded the contract for the water treating plant.

Textile Patents

COMBINED dye and stripper. 1,810,661. Wolf Kritchevsky, Chicago, Ill.

COMBINED dye and stripper. 1,810,662. Wolf Kritchevsky, Chicago. Ill.

COTTON PICKER. 1,810,386. Hiram N. Berry, Greenville, Miss. Assigned to Cotton Harvester Corp., of America, Greenville, Miss.

COTTON PICKER. 1,810,411. Charles R. Berry, Greenville, Miss.

COTTON PRESS. 1,810,064. Jeffrey J. Wallace, Amite, La.

DYE REMOVER.. 1,810,664. Wolf Kritchevsky, Chicago, Ill.

FABRIC STRIPPER. 1,810,665. Wolf Kritchevsky, Chicago, Ill.

KNITTED FABRIC. 1,810,580. William J. Schubert, Bethlehem, Pa. Assigned to Standard Trump Bros., Machine Co., Wilmington, Del.

LOADING of silk or silk-containing textile material. 1,810,238. Rene Clavel, Basel, Switzerland.

LOOMS, Weft detector for. 1,807,730. George A. Buffington, Worcester, Mass. Assigned to Crompton & Knowles Loom Works, Worcester, Mass.

MACHINE for forming yarn packages. 1,808,573. Arthur L. Remington, and A. J. Javery, Worcester, Mass. Assigned to Warp Compressing Machine Corp., Worcester, Mass.

MERCERIZATION of piece goods. 1,807,762. Fritz Thies, Hellerau, Germany.

OPENING, mixing, blowing-room, and like machinery used in cotton mills. 1,810,675. Tom Nuttall, Farnworth, and Sydney Shorter, Manchester, England. Assigned one-third to the British Cotton Industry Research Association, Manchester, England.

PATTERN mechanism for crochet knitting machines. 1,808,882. Sampson Broadwin, Brooklyn, N. Y.

PROTECTIVE lock for loom reversing mechanism. 1,810,679. Leonard M. Rogers, Mendon, Mass. Assigned to Draper Corp., Hopedale, Mass.

SHUTTLE and method of manufacture. 1,805,090. Paul W. Hiles, Auburn, N. Y. Assigned to Allen & Hills, Inc., Auburn, N. Y.

SPINDLES, Self-adjusting bearing for. 1,807,700. Charles H. Norton, Plainville, Conn. Assigned to Norton Co., Worcester, Mass.

SPINNING machines, ring and traveler for. 1,807,861. William T. Munson, Scranton, Pa. Assigned to Collins Supply & Equipment Co., Scranton, Pa.

SPRAYING of webs of fabrics and the like with different colors. 1,807,979. Julius Groetschel, Mannedorf, Switzerland.

STEAMLESS hosiery and process of manufacturing the same. 1,810,098. John M. Allen, Toronto, Canada. Assigned to Scott & Williams, Inc., New York.

STOCKING. 1,810,197. Arman H. Wittenberg, Los Angeles, Calif.

STOP MECHANISM for cloth drying machines. 1,809,398. Charles E. Bean, Stafford Springs, Conn.

STRIPPER for fabrics. 1,810,663. Wolf Kritchevsky, Chicago, Ill.

TEXTILE FABRICS, Method and apparatus for singeing. 1,807,703. Walter Osthoff, Barmen, Germany.

THREAD moistening guide. 1,810,007. Ernst E. Fisher, Rockledge, Pa.

TREATMENT of threads, fabrics, or other materials composed of or containing artificial filaments. 1,808,061. Charles W. Palmer and Stephen M. Fulton, Spondon, England. Assigned to Celanese Corp. of America.

TREATMENT of threads, fabrics, or other materials composed of or containing artificial filaments. 1,808,098. John F. Briggs and Charles W. Palmer, Spondon, England. Assigned to Celanese Corp., of America.

TUBE, Soluble for dyeing and bleaching. 1,810,057. William N. Pharr, Concord, N. C. Assigned two-thirds to Hartsell Mills, Concord, N. C.

VAT DYESTUFFS.. 1,804,535. Max Albert Kuntz, Manheim, and Karl Koeberle, Ludwigshafen-on-the-Rhine, Germany. Assigned to General Aniline Works, New York.

WASP BEAM. 1,807,582. Carl D. Brown, Hopedale, Mass.

WINDING MACHINE. 1,809,890. Ernest De Wolf, Cranston, R. I. Assigned to Universal Winding Co., Boston, Mass.

WOVEN FABRIC. 1,808,378. Charles Rosenstein, Paterson, N. J. Assigned to Rosenstein Bros. & Hook, N. Y.

YARN CARRIER control mechanism for flat knitting machines. 1,809,969. Albert Gee, Elkins Park, Pa.

YARN, Manufacture of. 1,804,968. Edmund E. Blake, Saco, Me. Assigned to Saco-Lowell Shops, Newton, Mass.

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Buying Through the Company

Editor, Overseers' Round-Table:

I WILL have to agree with Pete on this question to a large extent. I believe a company should allow its loom-fixers, section men, machinists, etc., to buy through the company the tools which they need on the job. There are some tools which the company usually furnishes, but every loom-fixer or machinist has his own tool box and set of tools. A good set of tools is expensive and should be purchased through the company so that as much can be saved as possible.

As for radios, automobile tires, and such things, I believe the help should do their purchasing from the regular merchants. If a company started the practice it would soon have a pile of bills owed to it by the employees. Pete has just about hit the nail on the head. H. B. B.

Choosing Men for Advancement

Editor, Overseers' Round-Table:

I THINK Pete is right in judging a man for advancement on ability alone. Where the qualifications are the same I would promote the older man by all means.

There is no good reason why the older man with all his 25 years' experience should not be better qualified than the other. If he has taken advantage of his opportunities to improve himself then I don't think any youngster could take his place or that he should. However, I think Bill is mistaken when he says that pushing a youngster ahead sours an organization. Employees can see as well as anyone who is best qualified and they will cooperate with the best leader. At any rate the older man has been paid right along for the services which he has rendered, so if he has nothing except his years of service, on which to base his claims for promotion, I would say advance the young man if he has the most ability.

L. A. ELMORE, overseer of Carding,
Rhodhiss Mills Co.

Editor, Overseers' Round-Table:

ADVANCEMENT, in my opinion, should be based on ability alone. I believe that it would be folly to advance a man just because of his years of service. The younger man can produce for the company to a far greater extent and that is a vital asset in the business world today.

One should be careful, however, to understand that the word ability includes a proper relationship between overseer and his help. Where such a relationship does not exist and the coordination which produces maximum efficiency does not exist, the overseer is lacking in ability even though he may be smart, full of pep and right on the job.

Every overseer must keep plugging away to keep up with new ideas which are daily coming before us. Should he fail to do this, the younger man who is wide awake surely deserves to get the promotion. E. F. DUNLAP, Dyer,
Waynesboro Knitting Co.

Editor, Overseers' Round-Table:

LOCAL CONDITIONS in any given mill would determine whether years of service or ability, or a combination of both should govern advancement.

The Overseers Talk

"IN THE old days," Superintendent Chase addressed the overseers, "each super thought he had a plant full of secrets and wouldn't think of allowing any outsider in the mill. However, all that has pretty much changed and even competitors are often shown around. At any rate there are quite a number of people who are interested in seeing a mill and who ask me if they may go through the plant. I've sort of hesitated about letting them, not because we have any secrets, but because I had a feeling that you and the operatives objected to visitors. How about it?"

"Naturally," Bill spoke up, "I have no objection to your taking some super friend of yours through the plant because that's sort of a business proposition. However, I do object to having just casual visitors gawking through the mill. In the first place it makes the help feel as though they were animals in a zoo to have strangers wandering around staring at them. If you allow school teachers, and relatives from out of town, and such folk, to go through the mill the help are sure to feel as though they were 'exhibit A' and you can't blame them for objecting. In addition, you all know how it throws things out of gear to have a few visitors go through your department. All your help forget what they were doing to stare at the visitors and it takes about fifteen minutes for them to quiet down again. You would be surprised if you checked up and found how efficiency dropped when outsiders were around and, believe me, in these days you can't afford to have things slow up even for a little while. After all, this mill is a place of business and not an exhibit at the County Fair. My idea is to keep it a place of business and not let anyone through who hasn't some business with the company."

"I suppose," Pete came back, "that I am pretty normal and I certainly wouldn't feel as though I

About Visitors

were some freak just because outsiders were curious enough about the mill to pay a visit. In fact it would make me sort of proud and I think that you will find most all the help the same way. We're all pretty proud of this mill and the more people from the outside want to see it the prouder we should be. In other words, I think Bill is all wrong about the help objecting. As far as the effect on efficiency is concerned he is all wrong there, too. Haven't you ever visited another mill and noticed how everyone speeded up a little as soon as they saw there was a visitor? It is just human to try to show your best to strangers. Instead of decreasing efficiency visitors would actually raise it as a break in monotony is just what workers need to keep them going. Routine is fine, but unbroken routine slows the worker mentally and physically. I'd even go so far as to put a sign up somewhere saying that visitors were welcome."

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Do *you* believe that casual visitors should be allowed to go through the mill?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

When the operators are young and active, have the productive urge to get things done, and can be classed as above the average mill personnel, they need a stabilizing influence, preferably someone chosen for length of service. If the man has a lot of ability so much better for both the help and the company.

In a mill where the rank and file are old hands who have been on the pay roll for many years, ability plus personality is vital in choosing the man to supply the energizing force.

In the older companies, the super's hands are pretty well tied in making a choice, due to established policies formulated generations ago. However, enough exceptions occur in the established policy of choice by service alone to keep the younger man with ability in the company. In this way the mill has an ever-ready supply of future executives and loses few to other companies.

The final answer to the man with ability is that if his own company does not recognize and pay for it, some other company is always glad to take him on and reap the returns on his experience and ability. E. E. GAGNON.

Vacation Shut-Downs

Editor, Overseers' Round-Table:

I AGREE with Bill about the vacation problem. Most every man has his particular hobby. If it happens to be hunting, he certainly would not derive much pleasure from a two weeks' vacation in mid-summer.

Every overseer should see to it that each of his workers can fill at least two different jobs in the department. In this way very little inconvenience is experienced when one or two hands are absent. If the department can function smoothly during the winter when there is more or less sickness, why cannot it pull through just as well during the vacation periods?

If a vacation shut-down is necessary on account of lack of business, that is another matter. CARDER.

Editor, Overseers' Round-Table:

I BELIEVE that it is a good plan to shut the entire mill down for two weeks each year so that all can have their vacations at once. However, I would make an exception in the case of the maintenance department as they can then make repairs which could not be made while running without slowing up production. The overhauling of motors, turbines, etc., could be done at this time. After the regular vacation, let the employees of the maintenance department take theirs two or three at a time.

Through this plan all the employees have a time of the year to enjoy themselves and they return to work feeling good, find the machines in good working order and are all set for another year of good work and production.

S. J. HOWLAND,
Cluett, Peabody & Co., Bleachery

Laying Off Employees

Editor, Overseers' Round-Table:

TEX HAS brought up a very vexing problem and one that is difficult of solution. Although he says he has settled it in his own way, I doubt very much if this was the best way.

Regardless of whether a company recognizes seniority, I do not think for a moment that any progressive company would be willing to dispense with the services of employees who had been loyal for 20 years, merely to make room for new ones even if they are much more efficient.

I am inclined to think that Joe is all wet in his interpretation of this problem; I agree with Pete that it is a serious problem and although his suggestion is very weak perhaps it is as near practical as any one can offer.

J. E. BRATTON.

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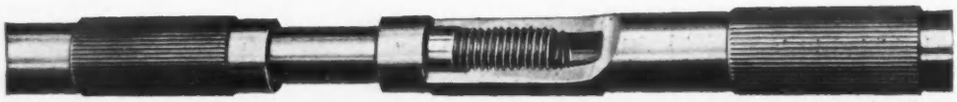
Summary of Discussion on A Vacation Shut-Down

By a margin of only one letter the vote went against an annual shut-down of two weeks each year so that all could have a vacation at the same time. Those opposing such a shut-down stated that it would work a hardship on some who were struggling to make both ends meet and that each person who did plan a vacation would be happier if allowed to choose a time which fitted in with hobbies or inclinations. Those voting in favor of the plan believed that it was far better to have all on vacation at once and that such a shut-down offered an excellent opportunity for repair work.

New Machinery *and* Processes



New type roll joint

Automatic Take-Up on Spinning Roll

AUTOMATIC take-up screw joints have been applied to steel spinning rolls manufactured by the Saco-Lowell Shops, 147 Milk St., Boston, Mass. From an operating standpoint, this new type of joint is said to have many advantages for front rolls. Buckling or distortion of the roll, for example, is impossible since all the thrust and torque are taken by the substantial thrust collar which is an integral part of the roll.

The combination of the case-hardening and the screw-joint feature, together with the selected roll-steel and specialized roll-making machine tools, produces a roll which the makers believe is practically indestructible, free from serious wear, and trouble-proof throughout the economic life of the frame. All new spinning frames manufactured by this company come equipped with this roll, and it may be applied to those frames which are already in use.

Package Dyeing of Short Warps

PACKAGE dyeing of short warps and special shades is made feasible with a system of warping developed by the Franklin Process Co., Providence, R. I. This system although not new in principle, is original in its application, and involves the adaption of a high-speed creel to silk warping. An advantage cited for this method is that warping is conducted at a relatively high speed, thus compensating for the time consumed in loading the creel. In addition, the necessity for splitting packages is obviated, and practically all of the yarn is used.

The warp is built up by running a series of sections onto a reel and then onto a section beam, instead of running all the ends at once, direct to a section beam. The yarn runs from the packages to the reel at 300 yd. per min. In running from the reel to the beam the speed is reduced to from 80 to 100 yd. per min., although it can be increased if desired. The total labor cost, based on a 134 lb. lot, is said to be about $0.0174 per lb.

Delustering Compound

DEVELOPMENT of a product for delustering silk hosiery is announced by the Laurel Soap Co., Tioga and Thompson Sts., Philadelphia. This product, which is known as Delustro, is easily applied and requires only a brief space of time in which to act.

After the goods have been dyed, they are placed in a bath containing 2 to 4 lb. of Delustro to each 100 gal. of water,

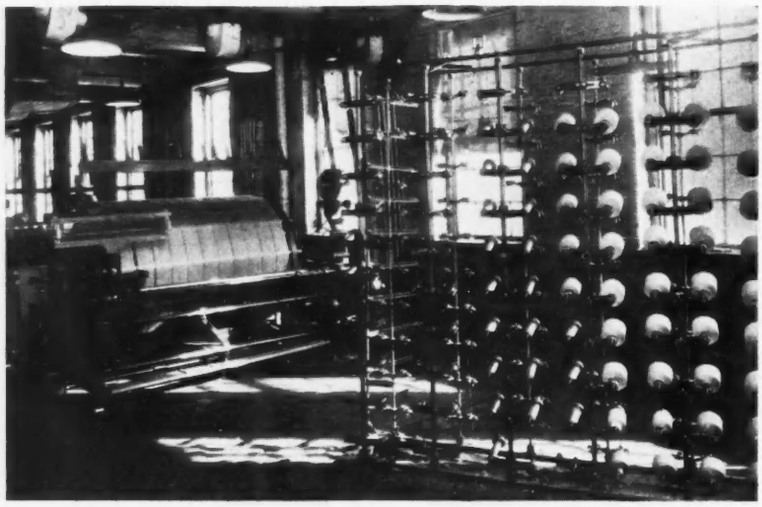


Fig. 1. Section or band warping from packages at 300 yd. per min.

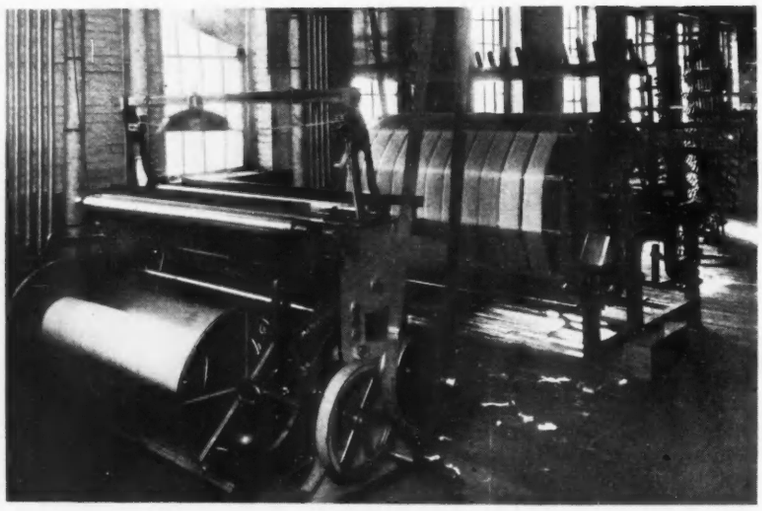


Fig. 2. Running from reel to section beam at 80 yd. per min.

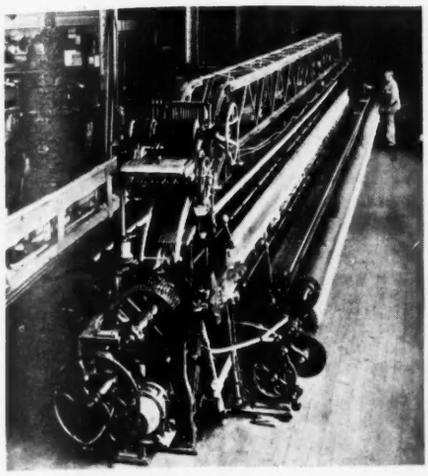


Fig. 1. Loom for weaving felt for paper-making machine

and are run cold for 8 to 10 min. The goods are then whizzed and are ready for boarding. It is stated that best results are secured if the work is done in the paddle machine or open box.

Loom for Manufacture of Paper-Maker's Felt

IN ORDER to make a tubular felt of the required size for paper-making machines, Crompton & Knowles Loom Works, Worcester, Mass., has developed a 2x2 box, 12-harness, Type A felt loom. The conveyor felt which is used in the paper-making machine is woven from high-quality woolen yarn and must be endless. Consequently, it is necessary to weave tubular goods which can be formed into an endless conveyor and then threaded onto the machine without splicing.

The new loom is 540 in. between swords and is capable of making a tubular material having a circumference of 1,040 in. Two 3-hp. motors, one at each end, operate the loom at a speed of 30 picks per min. There are seven crank wrists. The 28-in. shuttle is thrown as in other Crompton & Knowles looms, except that there are elliptical gears driving the picking roll, thus imparting a sharper motion to the picker stick. The overall length is 650 in., with a depth of 101 in., and a height of 100 in. The approximate weight is 20 tons.

Electric Motor

DEVELOPMENT of a new motor which bears the approval of the Underwriters' Laboratories for class 1, group D is announced by Howell Electric Motors Co., Howell, Mich. This motor is built in either polyphase or single-phase design with a totally enclosed frame or a totally enclosed, fan-cooled frame.

The polyphase motors are of squirrel-cage construction with extra heavy castings, bolts, and parts. All machined parts have large fitting surfaces to correspond with the Underwriters'

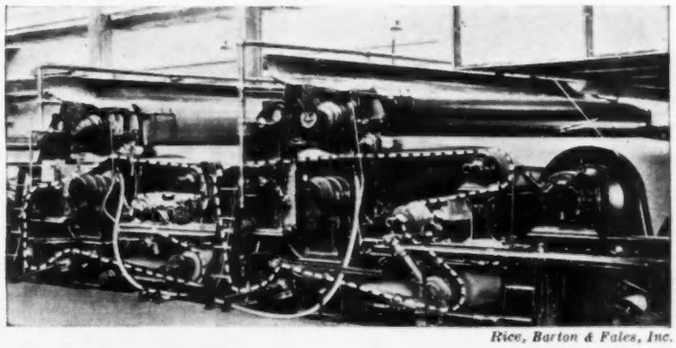
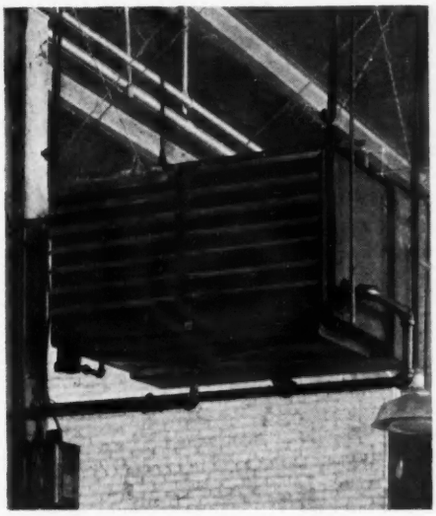


Fig. 2. Paper-making machine, showing use of felt woven on loom illustrated in Fig. 1

Rice, Barton & Fales, Inc.



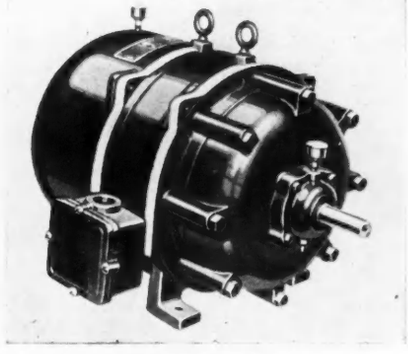
Air-conditioning unit of overhead type

Laboratory requirements for this class of service. The single phase motors are of squirrel-cage construction, similar to the polyphase motors. These motors are of the condenser-start type, each motor having a condenser starting unit placed in a separate box which must be mounted outside the hazardous area.

Air Cooler and Humidifier

AN OVERHEAD air-conditioning unit for cooling, heating, humidifying, and dehumidifying of buildings has been introduced recently by B. F. Sturtevant Co., Hyde Park, Boston, Mass. In operation, air is drawn in at the back of the unit by means of an electrically operated fan and then successively passes through a filter, water spray, another filter, and finally through vertical eliminators.

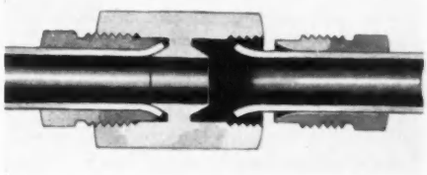
To eliminate the need of defrosting, the air is brought in direct contact with a liquid cooling agent instead of a cold metal surface, thus preventing the formation of frost. Since the unit is of the overhead type, it does not take up floor space and direct drafts upon occupants of the room are prevented. A unit 44 in. wide by 59 in. long by 35 in. deep is capable of handling 1,800 cu.ft. per min.



Motor with totally enclosed fan-cooled frame

Leak-Proof Compression Fittings and Tubing

FOR use in power plants and other applications where leak-proof small service lines are needed, the Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, Ohio, has announced what are known as Dieform compression fittings and tubing. Fittings are available in brass, Monel metal, or steel, and tubing in copper or steel. They are designed



Sectional view of leak-proof compression fittings

to give a tight metal-to-metal joint suitable for high-pressure and high-temperature service. Tubing and fittings of this type are said to be especially adaptable to water, steam, oil, compressed air, and gas lines, and for connections to metering equipment.

The accompanying illustration shows the manner in which the joint is made. It will be noted that the tubing is gripped securely between the seat in the center fitting and the seat on the tube nut, resulting in a tight, dry, and permanent joint. In flaring the tubing, the Dieform nut serves as a die, thereby assuring satisfactory seat with the angle properly proportioned to the size of the tube. The moderate angle of flare prevents the tube from splitting or cracking and also permits the use of hard-drawn tube where such is desirable. It is stated that the joint made in this manner is capable of resisting strains resulting from contraction, expansion, and vibration.

Questions... *and* Answers

Production in Cotton Carding

Technical Editor:

Will you kindly give me all the data and information that you have on hand as to the best kind of carding production obtainable on white and colored yarns, ranging in numbers from 8s to 32s? These yarns are for the knitting trade. (7592)

We assume that by "carding production" is meant the production at each process from picking to finished roving. The production must necessarily be given per machine, delivery, and spindle. There are 25 different yarn numbers from 8s to 32s, and it is possible to have many different organizations for these yarns. The average mill groups its yarns so that several can be made from the same finished roving (or with the same organization previous to spinning). It would have been less difficult if several yarn numbers had been definitely specified as being the yarns desired; this would have facilitated grouping the yarn numbers for their organizations previous to spinning. Since you have not specified the cotton, grade, staple, types of machines, etc., many things must be assumed.

Providing the most modern methods of opening, cleaning, and mixing cotton are used, the productions can be increased over those listed in this reply because higher efficiencies can be used in figuring them. Some of the productions in our list are based on figures obtained from colored yarn mills.

We have considered the productions for only four yarn numbers, as it is possible from these to estimate the approximate productions for the counts which fall between. For yarn numbers above 10s (dyed stock) use double roving; for those under 20s use single roving (undyed stock). All production figures are approximate, but based on information from reliable sources (see table).

Middling cotton, 1 1/8-in. plus, is used for both dyed and undyed organizations. Machines include 12x6 slubber, 10x5 intermediate, and 8x4 fine or finished roving. Two processes of drawing are used; only one is shown in the table due to the fact that both processes produce practically the same pounds per day. The finisher drawing process is the more efficient if creeled properly. Production is per machine for pickers and cards, per delivery for drawing, and per spindle for slubber, intermediate, and fine.

PRODUCTION IN POUNDS PER 48 HOURS

Process	Picker	Card	Drawing	Slubber	Inter.	Fine	Spin.
Organization	12 oz.	60 gr.	60 gr.	.50 hk.	1.00 hk.	None	8s (SR)
Undyed stock	8,800	610	830	127	55	.....	.....
Dyed stock	8,200	520	660	120	50	.....	.....
Organization	12 oz.	60 gr.	60 gr.	.50 hk.	1.00	3.00 hk.	16s (DR)
Dyed stock	8,200	520	660	127	55	12	.....
Undyed stock below	.....	.....	.....	.....	.....	.....	.....
Organization	12 oz.	50 gr.	45 gr.	.80 hk.	1.80 hk	None	16s (SR)
Undyed stock	8,800	510	623	72	28	.....	.....
Organization	12 oz.	50 gr.	45 gr.	.80 hk.	1.80 hk.	5.00 hk.	24s (DR)
Undyed stock	8,800	510	623	72	28	7	.....
Dyed stock	8,200	400	490	68	25	6.5	.....
Organization	12 oz.	50 gr.	45 gr.	.80 hk.	1.80 hk.	5.00 hk.	32s (DR)
Undyed stock	8,800	510	623	72	28	7	.....
Dyed stock	8,200	400	490	68	25	6.5	.....

oz. = ounces per yard. hk. = hank roving. DR = double roving used.
gr. = grains per yard. s = yarn count. SR = single roving used.

Wax Finish on Sewing Thread

Technical Editor:

We are enclosing a sample of wax-finish sewing thread. Will you kindly advise what kind of wax or emulsion should be used for finishing silk to duplicate the sample? (7603)

We have examined the small sample of silk sewing thread, but owing to the smallness of the sample, find it difficult to determine positively the amount and kind of wax used.

We are of the opinion that this silk has been dyed with a scroop finish: that is to say, after the silk came from the dyebath, it was rinsed and given an acetic acid or formic acid treatment to impart scroop and crunch. The waxy coating on the silk appears to be a mixure of stearic acid and paraffin wax. We believe that the stearic acid and paraffin wax were in the emulsified form when applied to the silk.

There are a number of so-called soluble waxes on the market, which are carefully combined mixtures of stearic acid softeners and paraffin wax, and which are used for this particular purpose. These products can be secured from several of the companies dealing in textile soaps and softeners..

Mildew in Thrown Silk

Technical Editor:

We shall appreciate information as to the cause of mildew in our thrown silk, also as to what effect this would have on broadsilk fabrics. One throwster's lot shipped in wooden cases has not mildewed, whereas another lot from a second throwster shipped in paper cartons has mildewed. (7602)

The best condition for the development of mildew is a temperature of approximately 60° F., a moist atmosmosphere, and the absence of light. According to some throwsters, thread soaped with olive oil is more susceptible to the mold fungus than silk soaped with animal oil. The positive effect of mildew action is softening of the sericin and staining of the fibroin. This stain is not easily removed in boiling-off. If the mildew is allowed to remain on the silk for any great length of time, it will cause spotted dyeing.

Paper cartons, if sealed with gummed strips, might retain sufficient moisture in the silk to soften the paper board, and thus permit mildew spores to develop in the paper and spread to the silk. It is more probable, however, that the mildew was caused by the condition of the thread; but this opinion must not be taken as conclusive, as mildew sometimes develops in humidifying tanks.

Thread which is affected by mildew should be exposed to light and dried.

Labor Costs for Woolen Blankets

Technical Editor:

In the April 25th issue of TEXTILE WORLD, *under Questions and Answers, you show the costs of manufacturing a 4-4½-lb. virgin-wool blanket and also a 4-lb. one. Will you kindly give us the detail of the labor costs per yard, 45 and 39c. respectively, also the manufacturing costs of 34 and 28c. Also please advise the kind and the number of looms per weaver that your estimates are based upon, the kind of spinning, and the size of cards. (7593)*

The details for the 4-4½-lb. woolen blanket are as follows: Estimated effi-

ciency, 65%; base, 100 looms; one loom per weaver; 48-hour week; filling, cop wound; 360-spindle mule spinning; cards, 48x60 in.; costs based on monthly production, 203 hours per month; loom speed, 110 picks per minute; 20 picks per inch; 65% production; 120,000 loom yards per month.

Labor Estimated	
Stock prep. and dyeing	$5,000
Picking	2,000
Carding	4,000
Spinning	4,500
Cop winding	3,000
Spooling	2,500
Dressing	1,000
Drawing-in	900
Day weaving	2,800
Piece weaving	12,000
Burling, sewing, and finishing	8,400
Shop, yard, eng., etc.	3,500
Office and overhead	4,300
	$53,900

$53,900 ÷ 120,000 yd. = $0.449 per loom yard.

Manufacturing Estimated	
Fin. room dyes & chem	$600
Dyes	6,000
Oil	1,600
Soap and alkali	3,300
Fuel	6,000
Freight and cartage	2,200
General exp., dep., etc	16,000
Selling expense	5,000
	$40,700

$40,700 ÷ 120,000 yd. = $0.34 per loom yard.

The details for the 4-lb. woolen blanket are as follows: 16 picks, 65%, 100 looms, monthly production of 150,000 yd.

Labor Estimated	
Stocks, prep. and dyeing	$5,500
Picking	2,200
Carding	4,500
Spinning	5,500
Cop winding	3,300
Spooling	2,700
Dressing	1,000
Drawing-in	800
Day weaving	2,800
Piece weaving	13,500
Burling, sewing, and finishing	9,000
Shop, yard, eng., etc.	3,500
Office and overhead	4,300
	58,600

$58,600 ÷ 150,000 yd. = $10.39 per loom yard.

Manufacturing Estimated	
Fin. room dyes & chem	$600
Dyes	6,500
Oil	2,000
Soap	3,700
Fuel	6,000
Freight and cartage	2,200
General exp., dep., etc	16,500
Selling expense	5,000
	42,500

$42,500 ÷ 150,000 yd. = $0.28 per loom yard.

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Shrinkage in Knitted Fabric

Technical Editor:

We are enclosing herewith samples of finished and unfinished underwear cloth. We are having difficulty with garments made from this fabric shrinking when they are washed. This cloth is knitted from an 80-in. warp and is finished 44 in., getting 5.50 sq.yd. per lb. The dyers assert that they do not stretch this cloth, leaving it loose on the frame. We should like to know how to eliminate this shrinkage. (7584)

Excessive shrinkage in underwear when the garment is washed is usually due to skimping somewhere during the manufacture of the fabric. If the proper gauge has not been used on the knitting machine, or if the fabric has been stretched in drying, shrinkage may occur. The least tension that can be put on cloth during drying, the better it is. If tension is applied, the fabric may stay out in width, gain in length, and the garment may be a good full size before laundering. At the first washing, however, the garment may shrink. If the goods are made properly and processed correctly, there should be only a slight shrinkage on washing the garment.

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Warp Streaks in Necktie Lining

Technical Editor:

I am forwarding you under separate cover a sample of cloth which is used for inter-linings in the manufacture of neckties. This material has a worsted filling and cotton warp. The warp is 26/2 ply, 30 turns per inch, and was delivered to our customer on section beams, one beam composed of regular twist yarn and one of reverse twist. This yarn was then reeded two ends of regular and two ends of reverse twist on to the customer's loom beam.

When finished, this fabric shows streaks, running warp-wise, due to some of the regular twist yarn being mixed with the reverse twist. I should appreciate your opinion on the matter. (7596)

We have carefully analyzed the swatch of cloth and cannot find that there has been any mixing of the regular and reverse hard-twisted warp yarn during the reeding in the loom reed. The ends are drawn correctly, two ends of the regular warp yarn drawn in one dent and two ends of the reverse yarn drawn in the next. This is repeated all through the piece. The streaky appearance in the woven cloth is caused by the uneven condition of the twisted warp yarn. This is easily seen with the naked eye; but if a counting glass is placed on the cloth, the uneven condition of the warp yarn is evident beyond question.

We realize that the object in employing the regular and reverse hard-twisted threads is to impart a certain amount of elasticity to the cloth, warpwise. That is the desired effect in a cloth of this type for necktie linings. We note, however, that in each case the ply yarn is twisted in the opposite direction to the singles. We are not prepared to say whether the twisting as shown in the warp yarn in the sample gives any more elasticity than if it were twisted on the principle of twist on twist; but we are confident that if twist on twist were applied there would be fewer streaks, because the ply yarn would be more even.

Inquiries should give the fullest information possible; and if damaged material is involved, a sample should be sent. We give no consideration to anonymous inquiries and do not undertake routine analysis of yarn or fabric, or investigation involving unusual expense.

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Replacement Offers Opportunity to Machinery Makers

Editor, TEXTILE WORLD:

Anent the cotton machinery business—on March 10 I wrote the following letter:

"In looking over the history of cotton spindles in the United States from 1860 on (in ten-year periods) I made some rough figures that might be of interest to you:

ACTIVE SPINDLES

	In South	In New England
1860	6%	74%
1870	5%	77%
1880	5%	80%
1890	11%	76%
1900	22%	69%
1910	36%	55%
1920	43%	52%
1930	60%	36%

"In the same period the number of active spindles increased approximately as follows:

	Increase	Millions
1860–1870	38%	5 to 7
1870–1880	50%	7 to 10
1880–1890	38%	10 to 14
1890–1900	25%	14 to 19
1900–1910	50%	19 to 28
1910–1920	25%	28 to 35
	Decrease	
1920–1930	10%	35 to 32

"You may want to work these figures out more elaborately, but I do think they might be put to some use in showing the trend of new spindleage which should come in the next ten years. In my opinion there should be a large amount of replacement, even if there is no actual gain in active spindles. From 1890 to 1920 there was an increase in active spindleage of 21,000,000, in addition to replacements."

The striking thing from the standpoint of the future of the cotton spindleage business is that from 1890 to 1910 14,000,000 new spindles were installed. For five to ten years since then a large number of these spindles have been run night and day. It is certainly safe to say that at least 5,000,000 of them are worn out and should be replaced at once. The remaining 9,000,000 will certainly be wearing out at the rate of 1,000,000 a year. If there should be replacement business of 1,000,000 spindles a year, there will be plenty of business for the manufacturers of cotton spindles in this country who have had a dearth of business for the last ten years.

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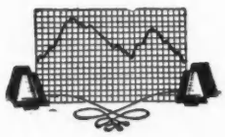
TEXTILE WORLD ANALYST



Wool Goods Rally Temporary Unless Output Is Guarded

By Dr. L. H. Haney

THERE appear to be some discrepancies in the price structure of the wool industry. Raw wool is relatively cheap. The TEXTILE WORLD index is approximately at the pre-war level, as are Ohio delaines unwashed, and the average price of wool to the farmer quoted by the Department of Agriculture is only 85% of pre-war. Worsted yarns, however, are 34% above pre-war. Cloth (TEXTILE WORLD index) is 91% above pre-war. The Bureau of Labor Statistics index of woolen and worsted textiles is 51% above pre-war.

Obviously, domestic wools are a little cheaper than 20 years ago, while yarns and cloths are at least 50% higher than then. Wool is low compared with cloth, and as yarn is about right in comparison with wool, it is also low compared with cloth. (Of course, the significance of such comparisons rests on a condition existing before the war.)

The explanation is probably to be found chiefly in labor costs. The tariff, however, is a factor. Another important point is the effect of wool-mill curtailment during 1930. Down to early 1931 there was a period of many months during which production was kept at relatively low level, and this evidently resulted in a reduction of stocks of goods. As a result, cloth manufacturers were able to maintain prices more strongly than the price of raw wool, with some improvement in their replacement margins.

Raw wool appears to have become cheap enough. Not only is it down to pre-war levels, but it is below average in comparison with the general level of commodity prices, and the farm price of wool shows only a normal spread over the farm price of cotton (about 5c. a pound). While the supply situation is so easy that no sustained advance in raw wool seems likely, the price seems to have touched bottom. Worsted sales yarns, considering increased labor costs, are probably cheap enough compared with raw wool, and are quite as low relatively to raw wool as they were in 1921.

Cloth, however, appears to be still so much out of line that present prices are likely to be maintained only as long as the recent spurt in demand holds.

The reduced stocks of cloth and improved business sentiment brought on a sort of covering movement during the last two or three months, a sharp spurt in machinery activity and mill consumption resulting, and the curves of wool manufacturing activity in May reached a level about equal to the peaks of recent cycles. The following points are now worthy of consideration: (1) Wool manufacturing is subject to a two-year cycle, and the sharp recent expansion in production has been of cyclical proportions; as the last cycle peak occurred in 1929 there would be good precedent for a letdown within a very few months. (2) There was a similar spurt in wool manufacturing in the first half of 1921 which was followed by a recession in the second half, while other industries were picking up. (3) The recent move has somewhat the appearance of short covering, which suggests that it may lose momentum before long. These points are made with the idea of warning against over-optimism and suggesting the desirability of maintaining a close watch on production schedules. Manufacturers' net profit margins are not any too high, and now that the industry is showing some of the benefits of past curtailment it would be unfortunate to lose ground by renewed overproduction.

Some realization of this condition appears in the mixed hopes and hesitation shown in the industry with regard to the fall season.

FAVORABLE FACTORS

The factors which tend to support the price of raw wool follow:

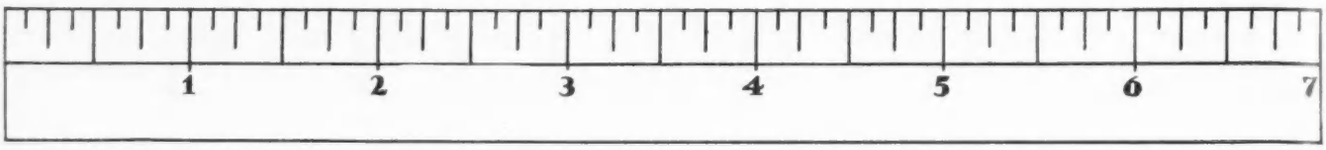
1. Foreign raw wool markets improved in tone following the announcement of German debt moratorium plans; Bradford top and yarn prices also were firmer. Foreign prices are relatively high compared with similar grades in this country.
2. Imports and receipts in this country are low compared with mill consumption.
3. Growers in the West have in many cases increased their asking prices for new clip wools. The Federal Farm Board is to loan 15% additional in some cases.
4. Medium wool prices, which have been relatively backward, are also strengthening.
5. Stocks of wool in the hands of pullers are reported to be the lowest in several years.
6. The seasonally adjusted index of average daily wool consumption rose in May to the highest level since early 1923

●

Summary: **Wool supplies are large, but a large increase in wool manufacturing activity has followed the realization that stocks of goods had become low. This should temporarily strengthen the wool market. Worsted yarn production is relatively large, however, and goods prices are high compared with raw wool. These conditions, and the low consumer purchasing power, make the duration of the rally uncertain.**

The analysis and forecast by Dr. Lewis H. Haney, director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The Analyst is based on statistical data and does not reflect temporary trade sentiment.

Measure the price of yarns by the number of yards you actually get



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when mill consumption was at the post-war peak.

7. The activity of woolen cards and spindles in May increased more than usual; the recession of March and April now appears to have been temporary.

8. Worsted comb activity in May made the largest percentage gain over April in at least 11 years; the adjusted index of worsted spindle activity in May was up to the peak level of 1929; June reports indicate that spinners were pressing top makers for delivery.

9. The spinners' replacement margin has been firmer; yarn concessions are harder to obtain.

10. Stocks of staple goods are scant; some mills reported sold through August; call for quick deliveries of men's wear goods; heavy weight sales ahead of last year; boucles and yarns for jersey cloths in demand.

11. The recent spurt in raw cotton and general raw commodity prices improves the position of wool.

Unfavorable Factors

The factors which tend to depress the price of raw wool follow:

1. Foreign wool manufacturing continues depressed and prices were easy until the debt talk stimulated markets. Wage cuts rumored in British wool industry. Foreign strike not settled.

2. The clip of southern hemisphere countries may show no reduction from last year. The carry over in New Zealand will be large.

3. The clip in northern hemisphere countries will probably show an increase over last year; the increase in the United States clip may be 15,000,000 lb.

4. We estimate that manufacturers' and dealers' stocks on April 1 were at least 20% above a year ago. The co-operatives are reported to have had 47,000,000 lb. of wool on June 13 compared with 39,000,000 lb. last year.

5. Sheep prices are probably the lowest on record.

6. The Federal Farm Board is believed to have no plans for stabilizing raw wool.

7. Receipts at Boston to date are about 18,000,000 lb. more than for same period of 1930.

8. Worsted yarn production appears to be too large compared with cloth production.

9. Manufacturers' replacement margins declined in May to the lowest since early 1925.

10. Some reports indicate that better grade goods are not selling well; tropicals have been less popular than last year; buying of some goods for fall delivery is uncertain.

11. Wool is dearer than cotton or silk.

12. The spurt in the activity of the wool industry is moving against the trend of general business.

The foregoing tabulation indicates greater strength on the favorable side. The activity in the industry is increasing and assures a continued large demand for raw wool for some time; heavy receipts are being largely offset by this unusually large consumption; and domestic prices are too low compared with foreign to encourage importing. As long as consumption holds up as well as total receipts, we may be reasonably sure that stocks are not increasing. On the other hand, caution is advisable, because replacement margins are poor, the industry is depressed in most foreign countries, supplies are easy, and general business and consumer purchasing power are not improving. Some strength in raw wool prices is likely to continue while consumption is so large, but there are huge supplies to be liquidated, and an arbitrary element in disposing of these makes any increase of prices of uncertain duration.

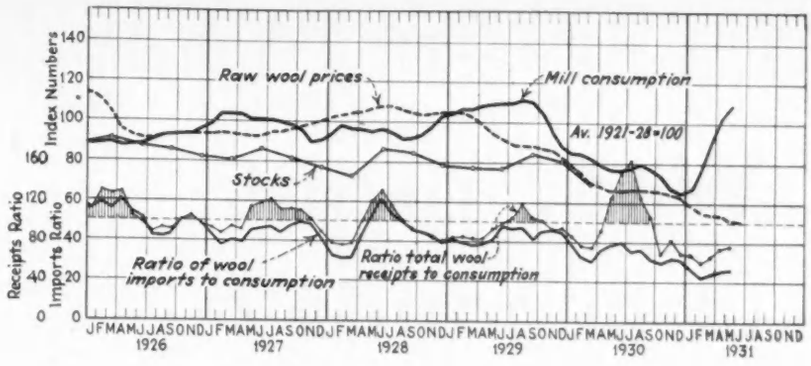

*Fig. 1. RAW WOOL BAROMETER: Price—*Textile World *Index; Mill Consumption—Grease equivalent, average daily adjusted for seasonal variation, three-month moving average; Stocks—U. S. Total, grease equivalent, end of quarter, adjusted for seasonal variation. Ratio of Total Raw Wool Receipts in the U. S. to Mill Consumption—Receipts not reduced to grease equivalent, adjusted for seasonal variation. Consumption as above, three-month moving average. Average for 1921-1928 = 100 for all four indexes. Ratio of Raw Wool Imports to Mill Consumption—Imports not reduced to grease equivalent, adjusted for seasonal variation. Consumption as above, Average 1921-1928 = 50, three-month moving average.*

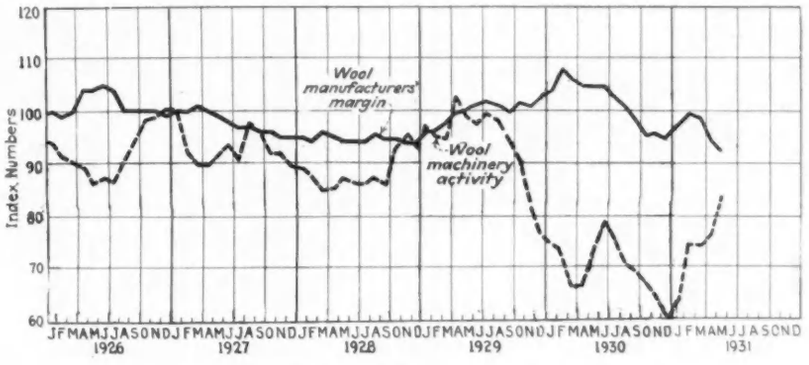

Fig. 2. WOOL MANUFACTURERS' MARGINS AND ACTIVITY: Wool Manufacturers' Margins—Average of replacement margins; Wool Machinery Activity—Composite of loom and spindle activity, adjusted for seasonal variation; Average 1923-1927 = 100 for both indexes.

Statistical Position Stronger

The Textile World index of raw wool prices during June was 51.1% of the average for 1921-28. This compares with an index of 52.7% in May and 65.4% a year ago.

The index of wool mill consumption in May was 122.1% of the average for 1921-28. This is a large increase over the April index of 108.0% and that of last year when the figure was 71.0%. As seasonal variation has been allowed for, wool consumption was at a higher annual rate in May than in any month since early 1923. One qualification is that part of the gain was caused by a relatively larger increase over a year ago in carpet wools than in combing and clothing wools.

Imports continue to be small, and in comparison with consumption are below normal. While domestic receipts are large even for this season, they are not far from normal, compared with consumption. This relationship suggests that stocks are not piling up and probably indicates a firm to stronger raw wool market.

Yarn Position Weaker

The Textile World index of worsted sales yarn prices in June was 65.5% of the average for 1921-28, against 66.0% in May and 78.8% a year ago. The small decrease which occurred in yarn prices was largely offset by the lower prices for raw wool, and therefore the replacement margin of the average spinner did not vary much from that of May.

This margin has been holding well in the last month or two, but the increase in worsted spindle activity to the peak levels of 1929, while loom activity has not increased in proportion, raises serious doubt as to the ability of spinners to

(Continued on page 75)

What profit in seconds?

None. In fact, they cost you a good round sum of money every year. Because you can never sell seconds for what they represent in time and labor and overhead.

And much of the money you lose in seconds you can often trace to the yarn. That is, unless you are a user of Quissett Yarn. For Quissett is standardized in quality. Its high breaking strength is consistent—there are no weak spots. The twist is even. Knots and slubs are a rarity. All this is due to Quissett's 20-year experience, to its large modern mill manned by life-long members of the spinning craft.

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Yarns Show Firmer Trend

A GOOD volume of yarn business was done last week, with continued inquiries reported on which sales have not yet resulted. Manufacturers so far have not felt compelled to meet recent advances in yarn quotations. Demand for their own goods has not yet developed any great volume, and without this, they are reluctant to follow the yarn market. Yarn prices have yet to reach a parity with the cotton advance.

Several important factors are looking for a broader development of inquiry and actual business within the next 60 days. The improved sentiment and general tone of business and the enormous buying power in the offing, because of depleted stocks of goods and yarns, they argue, all point to a change for the better in the yarn trade. These factors are willing to bide their time and let sales go by them at what they consider unprofitable prices, so that they may take advantage of the real buying movement which they confidently anticipate later.

Knitting Yarns Active

Knitting yarns continue to show more activity than weaving yarns. With good inquiry a fair volume of business is reported, 10s frame spun selling from 17½ to 18c., 30s at 25 to 25½c. Underwear mills form the main source of this business in carded yarns.

Carded mercerized yarns have also sold in good volume, lots in some instances aggregating several hundred thousand pounds. Several of these sales cover a six months' supply for the purchaser. These yarns were taken by hosiery mills, braid manufacturers and some weaving mills; the yarns ranged from 16s-2 to 40s-2, with prices on a basis of 38 to 40c. for 30s-2. This activity was prompted by recent advances in cotton. Further business is under consideration.

Combed mercerized yarns also found good inquiry, resulting in comparatively good contracts, although specifications have been noticeably poor against contracts held by many mills. Gray combed yarns are showing a firm position, while mercerized prices are holding firmly to levels indicated on page 72.

Weaving yarns draw scattered inquiry, with no consuming industry occupying a very prominent position. Although dealers state they could sell good quantities at old prices, spinners are asking higher figures. Sales are noted of 30s-2 warps at 24½ to 25c.; 20s-2 warps at 20 to 21c.

Word from southern centers this week indicates that combed yarns are displaying more resistance than carded qualities in the face of declining raw cotton. Gaston County spinners reported that a fairly steady demand for almost every description of combed yarns continued. Combed spinners pointed out that carded yarns advanced more quickly in response to advances in cotton during June and that combed qualities, being slower to react to raw cotton fluctuations, would naturally continue more firm than carded yarns.

Knitters have been calling for deliveries of both gray and processed yarns on old contracts and inquiring for spot delivery of certain descriptions that have been fairly well exhausted in so far as stocks are concerned.

◆Cotton Reacts From Recent Advance

EVENTS of the week in the cotton market were the successful conclusion of the Paris negotiations with reference to international debts and the Government report on the cotton acreage under cultivation as of July 1 this season. The settlement of the debt proposals in principle had been discounted, on the recent advance to 10.70 for October contracts toward the end of June. Reactions had followed during the course of the negotiations and the announcement of the settlement sent the price of October up to 10.50. The effect on sentiment then appeared to have been quite fully exhausted, however, and the trade turned its attention to the uncertainty of the approaching Government acreage report. This led to considerable evening up which was naturally accompanied by reactions and the publication of the report on Wednesday showed figures slightly disappointing to recent buyers. The decline which followed carried the price of October down to 9.83 making a decline of 87 points from the recent high level.

It is a question just what effect the debt moratorium has had on the consensus of opinion as to the world's probable requirements for next season. Probably there has been no crystallization of sentiment in this respect, but according to a recent canvass of cotton men in New York and at some of the southern points made partially before the debt proposals, the average opinion pointed to a consumption of about 12,743,000 bales compared with a world's consumption of around 11,150,000 bales for the present season according to latest estimates, 13,023,000 two years ago, and an average for the three previous years of 15,421,000 bales. Assuming that the market anticipates a world's consumption of around 12¾ million bales, it would look as if the crop prospect toward the end of June was just about sufficient to supply it.

Report 10% Acreage Decrease

According to the Government report there were 41,491,000 acres under cultivation as of July 1, this year, representing a decrease of 10% as compared with last season. On this acreage, the 10-year average yield per acre of around 151.4 lb. would mean a crop of approximately 12,734,000 blaes. Of course, the 10-year average yield covering the period 1921-30 inclusive is probably the lowest 10-year average on record. Nevertheless, the reduction in the use of fertilizer this year is considered by many as suggesting a yield somewhat below rather than above the 10-year average, and with private end-June condition reports showing on the average a condition of 70.7 was a shade below the 10-year average of private reports for that period which is about 71.3%.

A carry-over of perhaps 8¾ to 9 million bales at the end of this season will not prevent an advance should trade become active and estimates of consumption increase sufficiently to indicate a reduction of two or three million bales in the carry-over during the coming season. A number of trade authorities asked to express an opinion on the question of a fair price for March cotton in New York should a prospect develop for a crop 2,000,000 bales below the world's consumption for next season, gave figures ranging from 11 to 15c. and averaging a little over 13c. With a reduction of 1,000,000 bales in the carry-over next season, they thought next March would sell around 11.45 on the average while

Market Briefs

Cotton: *Reacted downward following government acreage report showing only 10% decrease from last year.*

Cotton Yarns: *Combed yarns steady; carded uncertain following recession of cotton.*

Cotton Goods: *Quieter, with print cloths off from top but finished goods firm.*

Wool: *London auctions disappoint but prices remain firm.*

Worsted Yarns: *Firm market with spinners refusing commitments for more distant months.*

Woolen Goods: *Demand uneven. Worsted suitings active; prices tend upward.*

Silk: *High levels hinder buying; manufacturers expect decline.*

Silk Yarns: *Throwsters and spinners confident of fall prospects.*

Silk Goods: *Canton, satin prices stronger; some firms advance.*

Rayon: *Fall shortage forecast, due to low inventories.*

Knit Goods: *Hosiery prices slightly firmer. Heavyweight underwear and sweaters improve. Swimsuits continue active.*

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It is said that Michael Angelo went in person to the quarries at Carrara to select his marble. Sculptors still go to the same quarries for their material—the most beautiful and uniform the World affords.

Yarn uniformity becomes a *fact* under Whitman laboratory control

Every one of the mills in the Whitman group has its own laboratory staff. Purchases of raw cotton and wool are held not only to usual trade classifications, but to individual mill standards that reject all sub-standard deviations. • At regular intervals, samples from every preparatory machine and spinning frame are subjected to searching tests. At each mill, men whose sole responsibility is the maintenance of quality and uniformity in the yarn, supervise every step. And under the Whitman group organization, these individual mill safe-guards are reinforced by cooperation in constructive research for the benefit of the group as a whole. • The uniformity of Whitman yarns thus becomes a matter that is constantly in the mind of every operator in our mills and a feature of Whitman yarns that you can depend upon implicitly.

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MONOMAC SPINNING CO.
French Spun Worsted

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ARLINGTON MILLS
Bradford Spun Worsted

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ACADIA MILLS
Mercerized Cotton

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NONQUITT MILLS
Fine Combed Cotton

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CRAMERTON MILLS
Fine Combed Cotton

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TALLAPOOSA MILLS
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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

ideas of prices should the crop be within 500,000 bales either way of the world's consumption range from 8¾ to 10¼c.

Small Lot Trading Featured

MEMPHIS, TENN., July 6.—Small orders for prompt or nearby shipment continue to account for most of the new business booked by Memphis shippers. Some bids are considered unworkable and other business cannot be accepted because the cotton wanted is too difficult to find. New crop business is slow in developing but, as usual at this season, merchants are probably booking more forward orders than they are willing to admit.

Mills are beginning to show more interest in new crop deliveries but merchants seem disposed to regard most inquiries as mere feelers. The staple association says demand is not general but steady from day to day; the association has disposed of all of its pool stock of 287,000 bales, which included carry-over from the previous year, except about 9,000 bales including rejections held at mill centers. Basis is unchanged from the previous week and is officially quoted as follows: Strict middling 1⅛ in., 225 on October New York, 1 3/16 in., 350 on, 1¼ in., 800 on; concessions are obtainable on very small lots, to close out but generally full basis is demanded. Most of the demand is coming from southern mills and centers on bright low middling and better, 1 3/32 to full 1⅛ in.; there has been fair inquiry from northern mills for 1⅛ in. and longer but actual business has been small. Foreign demand is very limited.

The weather during the week was almost ideal cotton weather in this territory; temperatures were high but good rains occurred over the holiday and week-end; the plant is squaring and blooming freely. The weather was moderately favorable over most of the belt but rainfall is needed quite generally.

◆ No Improvement in Cotton Wastes

THE cotton waste market is summed up by one man who says, "the actual poundage being turned over is about the same, but people seem to feel a little better." Justification for this better feeling is found in the fact that raw cotton has rallied from the low, that expanding activity is looked for from the mills and that stocks of wastes are reasonable.

Prices for wastes are quotably unchanged. A fair demand continues for good upland strips. Peeler comber meets with occasional spurts in demand although there is no sustained movement and prices of 7 to 7½c. merely represent a figure on which to start bargaining.

◆ Worsted Yarns Show Firmer Position

CONTINUED firmness in raw wool prices has a stimulating effect on worsted yarn sentiment. Trading has not been generally active, but yarn factors report improved attitude shown by buyers, and consider the outlook very promising. There was a large volume of yarns moved during June. A prominent trucking concern stated recently they hauled more worsted yarns in that month than at any time within the last year and a half, which is considered indicative of the situation. Spinners have been active and are still running on orders in an effort to maintain deliveries as required. Many factors also report a good daily business calling for small lots for prompt shipment to fill in, especially on knitting yarns.

Extended deliveries are not usually considered, although some buyers have shown willingness to trade if an attractive price can be secured. However, spinners are not willing to sacrifice profits, and are taking a more independent position.

A number of men's wear mills are still running on duplicate business in worsteds. Several of these expect to run to Sept. 15. Duplicate business is still reported coming in, and it is expected that more will be forthcoming during the current month. Yarn purchases are being made to cover these needs as they arise. There are also a few manufacturers trying to place orders for yarns for next season, with limited business accepted. This attitude is attributed to higher wool values. Inquiries are noted on 2-28s, 2-30s and 2-32s in 64s quality, with $1.40 to $1.42½ for Bradford spun, and 5c. higher for French yarns in 2-28s and 2-30s.

Dress Goods Trade Lags

Dress goods mills are reported still waiting for further developments on samples for the coming season. Several mills are reported running well on fabrics made from novelty yarns, but for the most part the real volume of business has not yet appeared. Crepe yarns are considered a promising factor for satisfactory business, but there is still a wide range of samples to be heard from.

Some substantial business is reported on yarns for sweater coats, due largely to the wool situation. In some cases deliveries are scheduled to run for six months, but most sales are made for a shorter period. A good business is said to be in prospect in this field. With a few spinners offering single 18s slub-dyed out of high quarter blood, or 50s, at around 92½c., other spinners have nothing to offer at a similar price, 97½c. to $1.00 being quoted. In view of firmer wool prices, it is hinted that this low price is likely to advance. Sweater mills are now showing their lines, and favorable reports are heard of prospects. With bathing suits scarce, due to the late season, there is talk of an earlier start for next season. Sampling is reported in single 20s slub-dyed French spun. Present business is said to be about over; sales made now are for delivery at once.

◆ Wools Less Active But Still Good

ALTHOUGH not continuing at the high rate of activity witnessed last week, demand for wool continues good and prices hold firm at the advanced levels which represent a gain of about 5 to 7% from the low point. As heretofore, demand centers on grades suitable for worsted manufacture and fine delaine has been moved at 25½ to 26½c., grease basis. Three-eighths blood is meeting with some demand, but quarter bloods remain slow although prices have firmed in sympathy with the rest of the market. Dealers are not attempting to force the market and the outlook is considered promising with a steady price level.

Domestic pulled wool is considered in a good position, particularly since the first five months of the year witnessed an increase of 45% in consumption of domestic wools, as compared with a similar period in 1930, to compensate for a decrease in consumption of imports amounting to over 50%. Prices for A.A. have strengthened and sales have been made at 64 to 69c. A-super is quoted at 52 to 56c.

Wools in the West are rapidly moving out of first hands at unchanged prices in most cases, although further strength has developed in some sections where there is a tendency to hold for advances. Fine wools have been practically cleaned up in Pennsylvania, and Ohio is reaching a similar situation. New Mexico, Texas, Utah and Idaho are well sold up while Montana wools are being bought as shorn.

Wool Consumption for May Up

Wool consumption figures for May, 1931, released by the Department of Commerce, show a total of 52,199,271 lb., grease equivalent, entering into manufacture, as compared with 47,709,971 lb. for April, 1931, and 32,604,860 lb. for May, 1930. While the increase was not so great as was expected in some quarters, consideration should be given to the fact that June consumption will also continue on a high level, despite the seasonal tendency to drop off after April.

The large turnover in tops has

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

brought the delivery problem to the forefront. More orders are being put through in the upper range of quotations in the better grades, one factor stating that 84c. represented the low for fine 64-66s, while some lots were held for 86c. Activity for combs during May was 96.7% of single shift capacity which marks a high point for the last six years. Comparative figures are 81.5% for April, 1931, and 67.7% for May, 1930.

Considerable interest centered on results of the fourth series of London auctions, July 7. While there had been evident some nervousness in Bradford in the last few weeks, it was thought that the action of the domestic market here and progress toward the moratorium will result in better prices than originally visioned. At opening, however, prices were par to 15% off as compared with close of last series.

Carpet wools are quiet, although this is seasonal. In general, the wool trade is optimistic. Demand from fabric users is being closely watched, but there is a feeling that the stock situation is healthy.

◆ Woolen Materials Continue Slow

THE woolen rag and rework market continues to hope for something better as a reflection of the general situation, but the hope has not been translated into anything tangible to date. The export business is looking forward to a better demand after the moratorium proposal is straightened out, but import business is, and will probably continue to be, dead. Competition with cheap wools and wastes takes some of the business which might normally be expected to go to rags and reworks. Prices are nominal and there is a wide variation in reported prices.

The waste market is in a similar situation. Fine white lap is nominal at 63 to 67c. and fine colored lap at 46 to 50c. About all that the advance in raw wool has done is to take a little of the softness out of the waste market.

No change is looked for until there is evident a better demand for woolen fabrics in the New York market. Some factors in close touch with the mills point to an increase in woolen spindle activity during May, of 5.3% over the April figure of 55% as an indication of the trend which they hope will develop. In the last analysis the woolen materials market needs a strong demand for woolen fabrics to make itself evident the latter part of this month. Noils are particularly in a difficult predicament due to large production and slack demand. No let-up in comb activity has been noted to date, and, as a result, noil stocks may become so heavy that prices will be beared even in a bull wool market.

◆ Throwsters, Spinners Expect Active Fall

CONFIDENCE as to the long-term outlook is growing, both in the spun and thrown silk markets. There is no active spot movement in either field, but weavers and knitters are inquiring actively, and yarn men look for a pick-up about the end of the month. This is normally the quietest period of the year; numerous mills closed this week on their annual vacation shut-downs.

Throwsters fare better than spinners in current buying; broadsilk mills place a fair quantity of small orders for thrown yarn, mostly fill-in business. Fabric production for fall is increasing very slowly, and as the weavers are determined not to cover ahead, they are not in great need of yarns. Thrown silk mills have moderate stocks on hand; these firms look for better buying about July 20, followed by a steady gain. Prices have been extremely variable, with the trend upward, but very little of the advance has been maintained.

Spinners are busy answering inquiries for fall; spot business is at a standstill, but mill men are confident of fall and spring prospects. They report increasing optimism among their outlets, especially among those weavers who plan to offer wide ranges of spun silk mixtures.

◆ High Levels Hinder Raw Silk Movement

RAW silk is in a state of flux. Prices have not yielded sufficiently from their sharp advance of ten days ago, to overcome manufacturer hesitancy, and true trading is light. There is considerable speculative buying, but the consuming industries generally hold off, in anticipation of a steadier market. It is still difficult to ascertain actual selling prices; the figures quoted depend largely on whether the importer has stock on hand. There is no great quantity of raw silk available in New York at the moment, and firms able to make spot shipment can get 20 to 25c. more for their silk.

The situation is developing somewhat into an endurance test. The broadsilk manufacturers will need substantial quantities of silk within two weeks for their fall fabric production, and they are waiting until the last minute, anticipating a possible recession in the primary market. Japan, on the other hand, is holding firm; but it is doubtful whether the Yokohama market can maintain its position for long. Importers are hopeful that the current levels will continue until July 20, in which case they believe the weavers will begin active coverage. However, a certain amount of fluctuation may be looked for; the probable outcome is a yielding at both ends.

Current buying is attended by much argument; weavers complain at the prices, asserting that they cannot raise fabric prices in proportion. However, several important fabric firms announced price increases this week, which may make the mills more willing to buy silk at or near present prices.

Hosiery mills, so often covered for months ahead, now are operating on a hand-to-mouth basis, so far as raw material is concerned. A few of larger companies have covered for their summer needs, but the industry as a whole runs on a low inventory, made possible by restricted output.

◆ Rayon Shortage in Fall Forecast

DEMAND for rayon yarns continues to show its seasonal decline, so far as spot movement is concerned, but there is a decidedly better tone in the market as regards fall. It could not be said this has brought a rush of futures; manufacturers grow more confident, and they inquire actively regarding August-September delivery prospects; but they are still reluctant to cover ahead. Knitters and weavers here and there placed orders for the remainder of this month.

Stocks in rayon plants are still low, and there is speculation among yarn producers as to the possibility of a shortage. It may be that the wish is father to the thought; in any event, consuming groups are not taking the idea very seriously. However, manufacturers watch the market closely; the big reduction in inventory effected by yarn firms is significant and it could conceivably mean a shortage, if demand took an unexpected jump next month. Rayon production is being kept down, with the aim of entering August with stocks at a minimum. Producers find nothing to enthuse about, in their first-half statements, so far as net profit is concerned, and they are eager to make a better showing between now and December. There is little likelihood of a price advance, though here too much depends on fall demand.

Current orders have an odd trick of leaning to yarns in which stocks are lowest, which compels increased output in order to make deliveries. Producers are all confident of a good fall season, and hold down on output chiefly because of uncertainty as to which denier will prove the best seller.

The market looks for another four weeks of quiet, with a turn for the better about Aug. 15. Producers are much encouraged by sales to date; and by the outlook; several firms report a gross turnover in excess of last year.

OLATE

replaced four other soaps in this commission finishing plant (and materially cut production costs).

Last March our Textile Research Department received a letter from the general manager of an Eastern plant whose business is commission finishing:—

> "We have been using 4 different soaps for processing the various fabrics that we handle," he wrote. "Can you suggest a way to cut down this big variety of soaps?"

We sent a technical man to his plant to see what could be done. After a careful check-up of the various operations, he suggested that Olate Flakes be tried in each, and the results compared.

The fact that this plant now uses Olate Flakes for all it's processing, speaks for itself. Olate not only produced an entirely satisfactory job in each case, but it also lowered production costs materially.

Perhaps you find it hard to believe that one soap can produce equally good results in several distinctly different operations and with widely different fibers. Yet when you are familiar with the many unusual qualities of Olate, you will understand why this is true.

If you are up against a similar problem and would like actual proof of Olate's surprising advantages, we suggest a few test runs in your plant. Your nearest Procter & Gamble salesman will be glad to arrange with you for these tests.

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Olate is a flaked textile soap with an exceptionally low titer and a high factor of safety. It assures better results in silk soaking and degumming, rayon scouring, wool scouring, and wet finishing. It dissolves and rinses rapidly, saving time, labor and steam. Guaranteed 92% real soap, or better.

FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆ Stability Follows Sharp Rise in Cottons

BETTER distribution of stability and demand is more evident in cotton goods than at any time since the sudden turn in sentiment and prices two weeks ago. Print cloths as usual took the widest swing and just before the holiday receded a bit from their top levels. Though the initial advance in these fabrics was a bit overdone so that reaction followed, the higher levels should still serve as a basis for an improved market in various lines of converted fabrics. Already large numbers of hesitant buyers of finished goods have been stirred to activity because of the rise in print cloths. This development should expand through coming weeks.

This week the refined and delicate sister of the print cloth group, fine and fancy goods including lawns, piques, etc., has shared the experience of her more robust relative in attracting greatly increased buying interest. In print cloths a certain amount of the early buying was speculative and numerous lots have since been resold by second hands. In the fine goods field buyers seem to be operating to cover definite needs and firmer prices will doubtless be maintained for some time to come.

Coarse Goods Lag

The coarse goods end of the market including sheetings and drills has been slower to move forward under the stimulus of rising cotton and brighter business prospects. Buying of these goods has, however, improved this week though it has been difficult to get improved prices for them. Commission houses are frank in acknowledging that stocks in some of these lines have not been held as low as they should have been. Analysis of this branch of the market in light of the overproduction of certain numbers, affords a good object lesson on the dangers of unrestrained output.

The upturn in gray goods came at just the time to prevent further weakness in some lines of finished cottons. There has been excellent demand for sheets and pillow cases which sellers believe reflects the success of retailers in the special sales announced during the last few weeks. Other lines of bleached goods have been moving better since the holiday and there is improved demand for shirtings and linings. Percales show signs of improvement and unless gray goods actually sag this week, the demand for percales will doubtless expand as buyers regain confidence.

Worth street merchants are a bit fearful that the improvement in tone, coming as it has on the threshold of the summer vacation period, will induce many mills to abandon their curtailed schedules. The excellence of current business is not regarded by students of the situation as any reason for expanded production. Rather, as they see it, the necessity remains keen for restriction of output to a minimum if the mills are going to benefit when real covering for fall needs begins in August. Unless the situation is wisely handled this early upturn may land the market in a slump at just the time when it should present its firmest aspect to instill confidence in those who need fabrics for September-October distribution. Of course much depends on the trend of raw cotton and the Government report issued at the middle of this week helped in a small way to clarify the outlook for the raw material. Insects and weather however may have much to do in shaping the actual amount of cotton harvested from the 1931 crop.

◆ Numerous Weavers Oversold on Worsteds

WOOL goods movement is uneven. The bulk of the current demand is for men's suitings, and at that end, activity is concentrated among a few leading mills. These weavers are oversold on worsteds, most asking six weeks for shipment, and some declining to guarantee shipment before September, the call is chiefly for semi-staples; subdued patterns in plain shades are favored. In low and medium-price lines prices hold their levels, and there is expectation of advances in late August. Weavers of high-grade worsteds, especially those in the $2.00 range, have raised their prices, 5 to 10c., and they have no difficulty in getting these rates; here too a further rise is talked of as an August possibility.

There is uncertainty as to when overcoatings will show their expected activity. The trade usually starts cutting overcoatings in September, but prospects point to an extension of the suiting season which would mean postponement of winterweight coat lines.

Cutters of women's wear are very hesitant in wool goods coverage—more so, even than in broadsilks; they buy ahead only under compulsion, and they do not share the general confidence regarding fall. Worsted weavers do not look for any sharp pick-up before the end of the month, despite the fact that cutters have minimum yardage on hand.

Mills continue to postpone their tropical offerings; these showings are already late, and prospects are they will not be offered before the end of the month.

Wool goods for women's wear have improved little, and weavers are uncertain of outlook at this end. The tendency toward quality, and the preference for the medium to high price lines, is maintained; it is regarded as indicating a trade-up and as forecasting a stronger fall market, but it is not yet definite enough to be relied upon.

Market grows gradually more confident regarding second half of the year, but there is some worry with respect to heavy stocks of men's wear fabrics. Most of the larger mills are operating at capacity; factors insist this is justified by demand, and in some cases at least actual orders do parallel output. The overproduction problem, if any, would seem to lie chiefly in the medium to low-price fabric ranges, where production has been particularly heavy.

◆ Canton, Satin Prices Advance

THE strengthening tendency in broadsilks crystallized early this week with the announcement by a leading firm, of a price advance on most of the leading fall lines. The prices of cantons and satins, offered by this firm, went up a few cents; the news had a healthy reaction on the market, and other firms followed suit. Fall interest among cutters-up and retailers increases steadily, and while orders are still small, they are numerous enough to promise a fairly profitable month.

Velvets Featured Again

Transparent velvets continue a foremost line. This week brought more interest, and cutters were in the market for a wide range of these piles. The call stresses black, and the usual popular brown variations. There is a growing call for dull transparent velvet, and some mills regard this as well worth watching. It may prove an important fall line, as it offers both distinction and novelty. This velvet has a low luster, and is available in all the current shades; production has been light so far, and cutters have difficulty in getting early shipment.

Metallic fabrics are picking up, but slowly; the season for these lines is not expected to develop before mid-August.

Market Tone Stronger

Market tone in broadsilks is very strong, and the outlook is promising. Stocks of fall fabrics increase steadily; it is of paramount importance, that weavers watch their output carefully, as a general policy of producing for stock, could easily upset the present satisfactory prospect for fall.

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Sizing Gums • Sizing Compounds

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KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆ Hectic Last-Minute Bathing-Suit Call

BATHING-SUIT buying kept mill agents at their desks late on the Friday preceding July 4, and Monday brought further last-minute orders. The decline that had been forecast for this week does not seem to be materializing. Jobbers and retailers have only minimum stocks, and the holiday demand cleaned many of them out. The week has been an active one for virtually all Worth street agents, and there is a possibility that swimsuit buying may even continue to the middle of the month. Lightweight sweaters excite little interest.

Winterweight sweaters show moderate improvement, and mill agents look to July to redeem the season, in part, at least. Chain distributors are placing orders, and though contracts are small, the aggregate is sufficient to encourage mills to increase production. The next two weeks, it is believed, will bring a real call for sweater staples. Jobbers and retailers are more confident of the season's prospects, and are inquiring actively. The best feature of this market is the light stocks. Mills held down rigidly on output, due to the late season, and now, although output has been greatly increased, stocks are well below this time in other years.

◆ Increased Call For Fall Underwear

BOTH light and heavyweight underwear are active and manufacturers are considerably more cheerful than they were a couple of weeks ago. There is steady movement of men's cotton track pants, also rayons, and especially keen interest in women's rayon mesh garments. The end of June brought its normal lull, but there was an increase in both orders and inquiries this week. Lightweight underwear mills look for a let-down in orders for the next few weeks, as is usual in mid-summer, but their season's business has been fair.

The chief need of the industry, both in heavies and summer weights, is a cautious production policy. Ribbed underwear mills, indeed, do not need such counsel. Buying has been so backward, that they have been going light on production, with the result that now stocks are disproportionately low. Demand for winter weights grows each day; there is still a large number even of the big chain distributors who have not placed their initial business, and it may be taken for granted that orders will exceed supplies, when this business begins to come in.

Heavyweight manufacturers place much reliance on developments during the next ten days; orders showed a rise early this week, but mid-month will probably see a bigger activity. Volume deliveries are beginning; the bulk of the mills expect to be shipping on a large scale next week.

◆ July Brings Firmer Hosiery Tone

THE first week of July brought a stronger tone to the hosiery market, and manufacturers look for steadily increased fall buying during the next ten days. Even before Independence Day, there was some call for women's rayon-and-wool numbers, for August and September delivery, and prices were firm, with talk of a possible advance next month. Fall coverage to date, is well below normal, but both jobbers and retailers expect early movement of the light stocks they have on hand, and are making inquiries preparatory to placing sizeable orders.

The turn of the month has brought little change to the full-fashioned situation. Numerous mills in the Pennsylvania area are closing down for vacation schedules, which may help to reduce stocks; however, neither the number of units closing, nor the length of the shut-downs is adequate to meet the markets needs. There is still considerable distress merchandise available; while the quantity of this has lessened, and prices are firmer, manufacturers still show a disposition to overconfidence. The surest road to a profitable fall is the road of curtailment. The outlook, as regards demand is promising, and the industry seems to be inclining away from price cuts; it is significant that several leading firms announced last week that prices for the fall would be more apt to rise than to decline.

Another healthy sign is the effort being waged to have seamless hosiery mills stand firm on prices. The current News-Letter of the National Association of Hosiery and Underwear Manufacturers points out that prevailing low levels of prices have already anticipated any further raw cotton reductions, and urges knitters to "go over their costs carefully, and decide once for all not to sell at a loss." Cotton observers look for the primary market to stabilize, bringing moderate recession perhaps, but no sharp decline.

Half-hose movement was quiet up to July 4, and opened slightly better on Monday, but the expected July improvement is slow in developing. There is fair demand for lines retailing at 25 and 35c. The coming week is regarded as marking a turning-point toward better business, both spot and future.

▸ Western Outerwear Knitters Hold Annual Meeting

The 11th annual meeting and golf tournament of the National Knitted Outwear Manufacturers Association, Western District, was held July 10 at the Woodmont Country Club, Milwaukee; Howard L. Ashworth is business manager for the organization. The golf tournament was held in the afternoon followed by the dinner and meeting in the evening.

▸ Mesh Bemberg Hose Goes Fast in National Promotion

A national promotion of full-fashioned mesh hose of Bemberg retailing at $1 was featured by stores throughout the country recently. In New York City Bloomingdale's sold 3,954 pairs, from Berkshire Knitting Mills during three days. In Brooklyn, Abraham & Straus and A. I. Namm, and in Newark L. Bamberger & Co., featured the Berkshire stockings with excellent results. Current popularity of mesh helped to stimulate sales at the low price, as the silk numbers are retailing generally from $1.65 to $2.95.

▸ Adjusting the Full-Fashioned Hosiery Machine

(Continued from page 42)

links 34 to levers 35. The latter are mounted to move freely on the shaft 8, collars being provided for preventing their endwise motion. These levers 35 are fitted with rollers 35*a*, which are acted upon by their cams 36. A stop hook 37 holds these rollers clear of the lowest portion of their cams, so that their rollers 35*a* can readily be shifted endwise by the operator, as explained in preceding articles. An adjustment is provided in each lever for moving its roller to and from its cam, and another adjustment is provided for each individual knock-over-bit bar at 38.

We have briefly described in preceding articles the motion of the catch bar for moving the dividing sinkers toward the needles and retracting the dividing and jack sinkers from the needles. In this Fig. 39 the catch-bar motion is again shown, as well as the means for raising and lowering it. The in-and-out motion is transmitted by the levers 39 and their rollers 40, and the up-and-down motion by the levers 41, their links 42, and roller 41*a*. Suitable adjustments are provided for separately adjusting each roller of each motion, similar to the adjustment construction of the previously described levers for the up-and-down motion of the needles.

TO THE MILL MAN...

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Have you ever considered what modern water coolers can do to increase yardage? They can do a great deal.

For, just exactly as *oil* has a lot to do with the output of cards and mules and looms, so *water* has a lot to do with the output of *people*.

Any old oil won't do and any old *water* won't do.

If water isn't cool enough, for instance, it won't refresh. And refreshment is one of the things that keeps the human machine running at full speed . . .

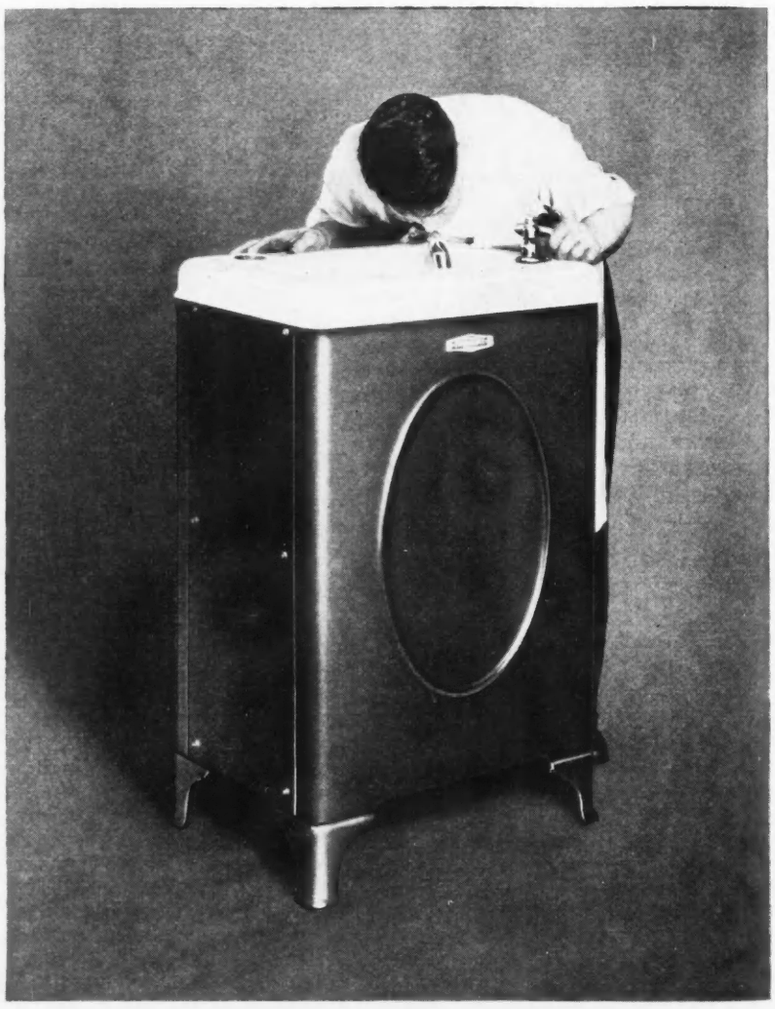
And if water is *too* cool it causes cramps and chills . . . with a consequent slowing up in producing power.

Frigidaire Water Coolers keep drinking water constantly at exactly the right temperature to promote efficiency in those who drink it.

Complete new line now ready

There's a complete new line of Frigidaire Water Coolers just out—for cooling bottled water or city water—equipped with bubblers, faucets or glass fillers—and with each model offering many outstanding features. Each is equipped with a quiet, all-enclosed, automatic refrigerating unit that carries a 3-year guarantee—and each has the extra power that cools water quickly and keeps it at "just-right" temperatures for comfort and health—all for just a few cents a day.

We suggest that you ask the Frigidaire representative to call with complete information.



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TEXTILE FINANCIAL NEWS

TEXTILE WORLD ANALYST

◆Grinnell Closes and Will Sell Inventory

GRINNELL MFG. CO., New Bedford, Mass., which closed down July 3, will liquidate a large portion of the merchandise inventory and make a proportionate payment to stockholders, according to announcement by Andrew G. Pierce, president. Grinnell is capitalized at $1,500,000 and last financial statement, as of Sept. 30, 1930, listed inventory at $991,250, although there has probably been some shrinkage since that date. In explaining the move, Mr. Pierce stated that it was inadvisable to continue operations under present conditions and pointed out that disposal of merchandise would not interfere with reopening of plant if conditions in the future should warrant. Last figures show 62,420 mule and 54,096 ring spindles with 3,135 looms.

Acme Rayon Deficit

A deficit of $10,120 for the year ended Dec. 31, 1930, as against a surplus of $73,689, is reported by Acme Rayon Corp., Cleveland, Ohio. There was an operating profit of $62,391 which was reduced to a deficit on the deduction of $72,511 for depreciation. On the balance sheet the property, building and equipment are carried at $1,009,493 and the process patents at $30,000. Inventories at the end of 1931 were $156,934 against $142,918 the year previous. Surplus appears as $42,104. Current assets amounted to $282,960 and current liabilities to $122,736.

Pee Dee Dividend from Surplus

Stockholders of the Pee Dee Mfg. Co., Rockingham, N. C., representing 375 shares, on July 1, received a 20% dividend, which totaled $75,000. This dividend was not from current operating profit, but represents a disbursement from the surplus that had been accumulated during periods of good business. Last March 13, the mill company made a similar 20% payment, also from the surplus fund.

Jantzen Lowers Dividend

The Jantzen Knitting Mills have declared a quarterly dividend of 15 cents on the common, payable, Aug. 1 to stock of record July 15, placing the stock on a 60-cent annual basis, against $1.50 previously. The regular quarterly dividend of $1.75 on the preferred also was declared, payable Sept. 1 to stock of record Aug. 20.

Bristol Pays $2 Additional

Bristol Mfg. Co., New Bedford, Mass., has paid an additional liquidating dividend of $2, making a total of $41 per share since the Jerome A. Newman interests purchased the plant for $39 a share. Much of the equipment has been sold or scrapped.

Pepperell on $6 Basis

Payment of quarterly dividend of $1.50 per share on July 1 places the stock of the Pepperell Mfg. Co. on a $6 basis, as compared with the $8 rate which has been in effect since 1916. Extras were paid in 1917, 1918 and 1920 totaling $27 per share. Pepperell's fiscal year ended June 30, but no report of earnings has been released to date. It is evident from the previous report, however, which showed net working capital of $10,222,214, that reduction in dividend rate is merely a conservation measure. The company earned $6.23 per share for year ended June, 1930. and $10.32 per share for year ended June, 1929.

Belamose Balance Sheet

Belamose Corp., Rocky Hill, Conn., has just issued its balance sheet as of Dec. 31, 1930. Ratio of over 4 to 1 is shown in favor of current assets against current liabilities, which compares with 8 to 1 at the end of 1929. Land, buildings and equipment are carried at $1,332,624 and rights and formulae at $88,106. Cash totaled $7,320 and receivables at $58,087 against $347,559 and $85,247 in 1929. Inventory was $473,054 against $307,032.

Skenandoa's Report

Skenandoa Rayon Corp., Utica, N. Y., reports net sales for 1930 at $1,606,928 and an operating loss of $22,552. Miscellaneous charges and preferred dividends left a deficit of $114,695. Plant and equipment are carried on balance sheeet at $4,002,144, patents and formulae at $796,173, cash at $87,246, receivables at $158,145, inventories $483,685. Total deficit is carried on the balance sheet at $150,935.

▶New England Textile Stocks

Quotations at "Public Sale" are based on last sales at Boston Public Auctions and Boston Stock Exchange. Bid and Asked prices are latest quotations of dealers.

	Sale	Bid	Asked
Am. Mfg. Co., pfd	52	42	46
Amoskeag	9¼	9	9½
Arlington	18½	22	24
Associated Textile	35–36½	34	37
Bates	60	48	55
Berkshire Associates, com	12½	5½	6½
Berkshire Associates, pfd	40½	24	28
Bigelow-Sanford, com	24	24	25
Boott Mills	120½	70	80
Edwards	80½	54	59
Esmond, pfd	98	95	99
Farr Alpaca	33¾–34	32	35
Hamilton Woolen	40	37	40
Hill	9	9	12
Indian Orchard	10	5	10
Ludlow	105¼	103	106
Merrimack, com	35	15	..
Nashua, com	7½	5	7
Nashua, pfd	29	27	31
Naumkeag	71–71½	71	75
Newmarket	16½	13	16
Otis	45	42	46
Pacific	19	19	20½
Pepperell	66½	62	65
Plymouth Cordage	63	62	65
York	8½	7	..

▶Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended July 7:

	High	Low	Last	Chge.
Adams Millis	25½	25	25	....
American Woolen	7½	6¾	7	+¼
American Woolen, pfd	30½	28½	29	—1½
*Bleumenthal	11½	11½	11½	....
Botany Mills, A	1½	1½	1½	..
Cannon Mills	21½	20½	21	+½
Century Ribbon	5½	5	5	—¼
Collins & Aikman	16½	14	14	—2
Consolidated Textile	⅝	½	⅝	—⅛
Durham Hosiery, pfd	21	21	21	....
Gotham Hosiery	11¼	10½	10½	—¼
Industrial Rayon	35	30½	30½	—5¼
Kayser, Julius	14	13⅞	13⅞	....
Kendall, pfd	45	40½	45	+5½
Mallinson	2	1⅞	2	+⅛
Mohawk Carpet	13½	13	13	—¼
Munsingwear	19	19	19	....
Pacific Mills	19	19	19	+1½
*Powdrell & Alexander	32½	32½	32½	+2½
Real Silk Hosiery	9⅜	8	8½	—1
*Tubize	6½	5½	5½	—1
United Piece Dye Works	24	22	22	—2

*Listed on Curb.

▶Southern Mill Stocks

(R. S. Dickson & Co., Charlotte, N. C.)

	Bid	Asked
Acme Spinning Co.	50	62
American Yarn & Processing Co.	44	54
Chadwick-Hoskins Co. (Par. $25)	5	9
Chadwick-Hoskins Co., 8%, pfd.	80	88
Crescent Spinning Co.	42	48
Durham Hosiery, 6%, pfd.	17	23
Erwin Cotton Mills Co., 6%, pfd.	86	91
Flint Mfg. Co.	..	56
Flint Mfg. Co., 7%, pfd.	84	92
Hanes, P. H. Knitting Co.	7	10
Hanes, P. H. Knitting Co., 7%, pfd.	82	95
Linford Mills	50	62
Perfection Spinning Co.	50	65
Roanoke Mills, 1st. pfd. 7½%	42	55
Rosemary Mfg. Co., pfd., 7½%	74	82
Stowe Spinning Co.	43	51
Ware Shoals Mfg. Co.	..	105
Ware Shoals Mfg. Co., 7%, pfd.	72	85
Winget Yarn Mills Co.	..	42
Wiscasset Mills Co.	120	135

(A. M. Law & Co., Spartanburg, S. C.)

Avondale Mills, Ala.	525	650
Bibb Mfg. Co.	83	88
Clifton Mfg. Co.	80	85
D. E. Converse Co.	..	75
Dunean Mills	70	90
Dunean Mills, pfd.	94	98
Gossett Mills	..	31
Hunter Mfg. & Com. Co., pfd.	72	76
Judson Mills, A pfd.	83	86
Judson Mills, B pfd.	79	83
Monarch Mills	70	80
Newberry Cotton Mills	80	85
Orr Cotton Mills	35	40
Pacolet Mfg. Co.	..	70
Piedmont Mfg. Co.	..	80
Riverside & Dan River Mills(Par $25)	7	9
Riverside & Dan River Mills, 6% pfd.	54	58
Southern Bleachery & Print Wks.,pfd	40	50
Spartan Mills	95	105
Union-Buffalo Mills, 1st pfd.	..	55
Victor-Monaghan Co.	39	41

▶New Bedford Mill Stocks

(Sanford & Kelley, New Bedford)

	Bid	Asked
Acushnet Mill	5½	6½
Beacon Mfg., com	100	....
Beacon Mfg., pfd	76	....
Booth Mfg. Co., com	5	7
Booth Mfg. Co., pfd	23	25
City Mfg. Co.	5	....
Dartmouth Mfg. Co., com	24	27
Dartmouth Mfg. Co., pfd	78	....
Gosnold Mill, com	10	12
Gosnold Mill, pfd	34	....
Gosnold Mill Notes	..	95
Grinell Mfg. Co.	30	....
Hathaway Mfg. Co.	30	32
Holmes Mfg. Co., pfd	3½	4½
Kilburn Mill	8½	10
Nashawena Mills	14½	16
N. B. Cotton Mills, pfd.	..	17½
Neild Mill	21	23
Nonquitt Mills	3½	3¾
Pierce Mill	72½	77½
Potomska Mills	37	....
Quissett Mills, com	36	38
Soule Mill	..	64
Taber Mill	5	6
Wamsutta Mills	5½	6½

QUOTATIONS

at close of business, July 8, 1931
Prices cover average qualities unless otherwise stated

Cotton Goods

	July 8	June 30	July 9, 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60	3½c.	3½–3⅝c.	4 –4¼c.
38½-in., 64x60, 5.35	5 –5¼c.	5¼–5½c.	5⅛–5⅜c.
39 -in., 68x72, 4.75	5¼–5⅜c.	5⅜–6c.	6¼c.
39 -in., 72x76, 4.25	6¼c.	6⅜c.	7¼c.
39 -in., 80x80, 4.00	6¼c.	6¼c.	7⅞–8 c.
BROWN SHEETINGS			
36-in., 56x60, 4.00...	5⅛c.	5⅛c.	7 c.
36-in., 48x48, 3.00...	5⅛c.	5⅛c.	8⅛–8½c.
37-in., 48x48, 4.00...	5c.	5⅛c.	6¼–6⅜c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	5¼–6c.	5¼–6c.	6¼–6⅜c.
36½-in., 64x60, 5.75	5c.	5⅛c.	5¼–5⅜c.
MISCELLANEOUS			
Drills, 37-in., 3 yd...	6¼c.	6¼c.	8½c.
Denims, 2.20.....	11 c.	11 c.	12½c.
Tickings, 8 oz.....	14 c.	14 c.	18–19½c.
Standard prints.....	7¼c.	7¼c.	8 c.
Eastern staple ginghams, 27-in.....	8 c.	8 c.	10 c.

Cotton Waste

Peeler comber	7 – 7½
Peeler strips	6½ – 7
Sak. comber	7½ – 7¾
Choice willowed fly	3½ – 4½
Choice willowed picker	3 – 4
Sak. strips	10½–11
Linters (mill run)	2½ – 3½
White spooler (single)	5¼ – 6

Cotton Yarn

CARDED (Average Quality)
Double Carded 2c.—4c. higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s...	$0.17	22s.....	$0.21
10s.....	.17½	24s.....	– .22
12s.....	.18	26s.....	– .23
16s.....	.18½	30s.....	– .24
20s.....	.19 – .19½	40s ex.qual.	.34 – .35

TWO-PLY SKEINS AND TUBES

8s-2.....	$0.17 – .17½	26s-2.....	$0.23
10s-2.....	.17½ – .18	30s-2.....	– .24
12s-2.....	.18 – .18½	36s-2.....	– .30½
14s-2.....	– .19	40s-2.....	.31½ – .32½
16s-2.....	.19 – .19½	40s-hi.brk.	– .35
20s-2.....	.20 – .21	50s-2.....	– .40
24s-2.....	.22 – .22½	60s-2.....	– .46

SINGLE WARPS

10s.....	$0.17–$0.17½	24s.....	$0.22
12s.....	.17½ – .18	26s.....	– .22½
14s.....	.18 – .18½	30s.....	– .24½
16s.....	.18½ – .19	40s.ex.qual.	– .35
20s.....	.19 – .20		

TWO-PLY WARPS

8s-2.....	$0.18½	24s-2.....	$0.22½
10s-2.....	– .18½	26s-2.....	– .23
12s-2.....	– .19½	30s-2.....	.24 – .24½
14s-2.....	.19 – .19½	40s-2 ordin.	.31½ – .32
16s-2.....	– .20	50s-2.....	– .40
20s-2.....	.20 – .21	60s-2.....	– .46

8s-3 and 4-ply skeins and tubes: tinged, 16–16½ white, 17-17½; waste, 15½

HOSIERY CONES (Frame Spun)

8s.....	$0.17½	22s.....	$0.21½
10s.....	– .18	24s.....	– .22½
12s.....	.17½ – .18	26s.....	– .23½
14s.....	– .18	30s tying...	– .24
16s.....	.18½ – .19	30s reg....	.25 – .25½
18s.....	.19 – .19½	30s ex.qual.	.26½ – .27
20s.....	.19½ – .20½	40s.....	.32 – .33

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2.....	$0.31 – .33	60s-2.....	$0.50
30s-2.....	.35 – .36	70s-2.....	.60
36s-2.....	.37 – .38	80s-2.....	.71
40s-2.....	.39 – .40	90s-2.....	.90
50s:2.....	.45 – .46	100s-2.....	1.10

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2.....	$0.30 – .31	60s-2.....	.51 – .52
30s-2.....	.35 – .36	70s-2.....	.61 – .62
36s-2.....	.37 – .38	80s-2.....	.72 – .74
40s-2.....	.39 – .40	90s-2.....	.90 – .92
50s-2.....	.44 – .46	100s-2.....	1.10 –1.12

SINGLES

12s.....	$0.26½ – .27	30s.....	$0.35 – .36½
14s.....	.26 – .27	38s.....	.38 – .39
16s.....	.27 – .27½	40s.....	.39 – .40
18s.....	.28 – .28½	50s.....	.43 – .45
20s.....	.28½ – .29	60s.....	.48 – .52
24s.....	.30½ – .31	70s.....	.60 – .62
28s.....	.33 – .33½	80s.....	.71 – .75

MERCERIZED CONES—(Combed, Ungassed)

26s-2.....	$0.47 – .48	90s-2.....	$1.18 –1.23
30s-2.....	.49 – .50	100s-2.....	1.48 –1.53
36s-2.....	.52 – .53	120s-2.....	1.88 –1.93
40s-2.....	.55 – .56	30s.....	.60
45s-2.....	.57 – .58	40s.....	.65
50s-2.....	.59 – .60	50s.....	.70
60s-2.....	.67 – .68	60s.....	.80
70s-2.....	.79 – .80	70s.....	.90
80s-2.....	.90 – .91	80s.....	1.05–1.10

Cotton Prices and Statistics

FLUCTUATIONS OF FUTURES

	Closed July 1	For Week—High	For Week—Low	Closed July 8	Net Chge.
July.....	9.79	10.17	9.70	9.39	—.40
August....	9.90	10.17	9.90	9.50	—.40
September.	10.01	10.40	10.01	9.61	—.40
October....	10.13	10.53	10.04	9.72	—.41
November.	10.25	10.62	10.25	9.83	—.42
December..	10.37	10.75	10.30	9.95	—.42
January...	10.48	10.86	10.42	10.05	—.43
February..	10.57	10.94	10.57	10.14	—.43
March.....	10.67	11.05	10.61	10.23	—.44
April.....	10.76	11.13	10.76	10.33	—.46
May.....	10.87	11.25	10.78	10.43	—.44

SPOT FLUCTUATIONS FOR WEEK
(Middling)

	New York	New Orleans	Liverpool
Wednesday, July 1	10.15	9.95	5.40
Thursday, July 2..	10.00	9.81	5.52
Friday, July 3 ...	10.35	10.16	5.48
Saturday, July 4 ..	Holiday	Holiday	5.47
Monday, July 6 ...	10.15	9.95	5.53
Tuesday, July 7.	9.95	9.78	5.58
Wednesday, July 8	9.55	9.34	5.36

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, July 3		Change
July Sak.....	15.48	+0.56
August uppers.....	11.27	—0.03

July-Aug. Shipment c. i. f. Boston
(Tariff not included)

Fully good fair Sak.....	18.56
Fully good fair to good Uppers.....	13.72

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling.....	20
Peruvian Pima No. 1.....	19
Peruvian Moderate Rough.....	15½
Peruvian Full Rough.....	18
China Tientsin No. 1.....	11½
India Rough.....	8 to 11
India Smooth.....	8 to 11

(By Bruns-Nordeman Co.)

BASIS MIDDLING

	Monday, July 6	Saturday, June 27
10 markets average.....	9.83	9.87
Memphis.....	9.50	9.50

PREMIUM STAPLES

First Sales from Factors Tables at Memphis

Grade Strict Middling	Basis Steady
1⅛-in.....	12.25@12.75c.
1 3/16-in.....	13.50@14.00c.
1¼-in.....	18.00@18.50c.

CURRENT SALES

	For Week	Prev Week	Week Before
Memphis total.....	5,418	5,276	3,782
F.o.b. included.....	4,545	4,612	3,380
10 markets.....	15,873	15,466	15,541

MEMPHIS RECEIPTS, SHIPMENTS, ETC.

	For Week	Last Year	Year Before
Net receipts.....	424	2,899	873
Gross receipts.....	4,907	6,455	2,847
Total since Aug. 1, net..	657,174	941,087	859,706
Shipments.....	17,285	15,961	16,789
Total since Aug. 1.....	1,373,709	1,839,686	1,811,918
Total stock.....	139,247	180,288	70,441
Decrease for week.....	12,378	9,506	13,942
Unsold stock in hands of Memphis factors...	12,221	28,382	.....
Decrease for week.....	1,453	1,274	.....

AVERAGE PRICE JULY-AUG. SHIPMENT
HARD WESTERN COTTON
F.o.b. NEW England

	Middling	St. Middling
1 1/16-in.....	12½–12¾c.	12¾–13c.
1⅛-in.....	13½–13¾c.	14 –14¼c.
1 3/16-in.....	15½–15¾c.	16 –16¾c.
1¼-in.....	20 –21c.	22 –23c.

Basis on New York, October, 10.31.

SPOT FLUCTUATIONS AND STOCKS

Markets	Middling June 30	Middling July 8	Sales	Stocks This Week	Stocks Last Year
Galveston.....	9.95	9.55	772	450,593	194,899
New Orleans...	9.74	9.34	2,330	633,698	365,620
Mobile.....	9.05	8.70	182	246,183	10,820
Savannah.....	9.48	9.13	1,115	350,128	103,378
Norfolk.....	9.63	9.25	120	56,155	50,244
New York.....	9.95	9.55	100	227,726	237,449
Augusta.....	9.50	9.06	331	64,381	51,594
Memphis.....	9.15	8.70	2,683	135,102	171,580
St. Louis.....	9.50	9.40	....	3,972	7,881
Houston.....	9.75	9.35	1,100	787,145	567,473
Dallas.....	9.45	9.05	2,230	6,465	10,910

DIFFERENCES ON AND OFF MIDDLING

WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F.....	.75†	1.00†	.85†	.75†	0.88†
S.G.M.....	.60†	.75†	.75†	.63†	.70†
G.M.....	.50†	.50†	.60†	.50†	.52†
S.M.....	.35†	.25†	.35†	.25†	.31†
S.L.M.....	.50*	.50*	.50*	.50*	.50*
L.M.....	1.15*	1.25*	1.25*	1.25*	1.24*
S.G.O.**....	1.80*	1.80*	2.25*	1.75*	1.96*
G.O.....	2.45*	2.05*	3.00*	2.25*	2.60*

YELLOW TINGED

G.M.....	.40*	.75*	.50*	.50*	0.54*
S.M.....	.65*	1.00*	1.00*	.75*	0.89*
M.**.....	1.40*	1.25*	1.50*	1.25*	1.42*
S.L.M.....	1.90*	1.75*	2.15*	2.00*	1.99*
L.M.**.....	2.65*	2.00*	2.75*	2.75*	2.67*

YELLOW STAINED

G.M.....	1.50*	1.50*	1.50*	1.25*	1.45
S.M.**.....	2.00*	2.00*	2.00*	2.00*	2.00
M.**.....	2.75*	2.50*	2.75*	2.75*	2.70

BLUE STAINED

G.M.**.....	1.50*	1.50*	1.50*	1.50*	1.50*
S.M.**.....	2.00*	1.75*	2.00*	2.00*	1.98*
M.**.....	2.75*	2.25*	2.75*	2.75*	2.68*

**Grades not deliverable on contract. †On Middling *Off Middling.

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA (IN GREASE)

Fine delne	$0.25½–$0.26½	¾ blood	$0.21½–$0.22½
Fine clthg	.20 – .21	½ blood	.20 – .21
¼ blood	.24 – .25		

TEXAS AND CALIFORNIA (CLEAN BASIS)

Texas, 12 months	$0.59 –$0.60
California, Northern	.52 – .53

PULLED—EASTERN (CLEAN BASIS)

A-A	$0.64 –$0.69	B-Super	$0.45 –$0.50
A-Super	.52 – .56	C-Super	.42 – .45

MONTANA, IDAHO AND WYOMING (CLEAN BASIS)

Staple fine	$0.61 –$0.63
Staple ½ bld	.55 – .58
Fine and fine medium	.55 – .58
¾ blood	.45 – .48
½ blood	.40 – .42

MOHAIR—DOMESTIC

Best carding	$0.23 –$0.25
Best combing	.31 – .33

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 –$0.20
Cape firsts	.18 – .21

FOREIGN CLOTHING AND COMBING (CLEAN BASIS IN BOND)

Australia:	
70s	$0.53 –$0.55
64s	.46 – .48
58s-60s	.41 – .43
(IN GREASE)	
Montevideo:	
58s-60s	$0.19 –$0.20
56s	.18 – .19
50s	.16 – .17
Buenos Aires:	
4s, 40-44s	$0.14 –$0.15
5s, 36-40s	.12 – .14

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.22 –$0.24
China: Combing No. 1	.13 – .14
China Filling Fleece	.12 – .14
Szechuen ass't	.12 – .14
Cordova	.14 – .15
Scotch black face	.15 – .17
East India: Kandahar	.17 – .19
Vican'r	.23 – .25
Joria	.23 – .24

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.77½–0.80
2-24s 40s	.... – .85
2-26s 44s	.87½– .90
2-28s 46s	.92½– .95
2-30s 48s	.95 – .97½
2-32s 50s	.97½–1.00
(Single yarns 5c. less than above)	
2-36s, 58s	$1.22½–1.25
2-40s, 60s	.... –1.32½
2-40s, 64s	1.35 –1.37½
2-50s, 66s	1.45 –1.50
2-60s, 70s	1.85 –1.87½

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.75 –0.77½
2-20s, 48s in oil	.... – .80
2-20s, 50s in oil	.80 – .82½
2-20s, 56s in oil	.92½– .95
2-20s, 60s in oil	1.10 –1.12½
2-20s, 64s in oil	1.20 –1.25
1-18s, 46s dyed	.95 – .97½
1-18s, 48s dyed	.97½–1.00
1-18s, 50s dyed	.97½–1.00
(Oil yarns 17½c. less)	

FRENCH SYSTEM

1-20s, 58s	$1.05 –1.07½
1-20s, 60s	1.10 –1.12½
1-18s, 64s, dyed	1.32½–1.35
1-26s, 64s	1.12½–1.15
1-30s, 60s, Warp	1.20 –1.22½
1-30s, 64s, Warp	1.22½–1.25
2-30s, 64s, Fancy mixes	1.45 –1.47½
2-40s, 64s, Zephyrs	1.35 –1.40
1-50s, 66s	1.47½–1.52½
2-50s, 66s	1.50 –1.55
1-60s, 70s	1.85 –1.87½
2-60s, 70s	1.90 –1.95

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$ .95 –1.00
1-40s, 50-50-60s on cops	1.10 –1.15
1-40s, 50-50-64s on cops	1.12½–1.15
1-40s, 50-50-64s Australian cops	1.20 –1.25

Underwear mixes, 3 to 5c., Solid color, 35c. additional.

New York Top Futures

	Closed June 30	For the Week—High	Low	Closed July 7	Net Change
September	73.40	75.50	73.30	73.50	+.10
October	73.40	75.50	73.30	73.30	—.10
November	73.40	75.00	73.30	73.30	—.10
December	73.40	75.00	73.30	73.30	—.10
January	73.40	75.50	73.30	73.30	—.10
February	73.40	75.00	73.30	73.30	—.10
March	73.40	75.00	73.30	73.30	—.10
April	73.40	75.00	73.30	73.30	—.10
May	73.40	75.00	73.30	73.30	—.10

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.84–$0.86
Half-blood (60-62s)	.78– .80
High ¾ blood (58s)	.70– .72
Aver. ¾ blood (56s)	.63– .65
Low ¾ blood	.60– .62
High ½ blood (50s)	.53– .55
46s S. A. and N. Z	.51– .53
44s S. A. and N. Z	.50– .52
40s S. A. and N. Z	.48– .50

TOPS—BRADFORD, ENG. (JULY 3)

Fine (70s)	26½d	¾ bld. (56s)	15½d
Fine (64s)	23 d	½ bld. (50s)	13 d
¾ bld. (60s)	21 d	Cross-bred (46s)	10½d
¾ bld. (58s)	18 d		

NOILS—BOSTON

Fine	$0.42–$0.44	High ½ bld	$0.33–$0.35
Half-bld	.38– .40	Low noils	.28– .32
Aver. ¾ bld	.35– .38	Medium colored	.25– .28
Fine colored	.33– .35		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.63 –$0.67
Lap, fine colored	.46 – .50
Hard ends, fine white	.52 – .55
Hard ends, ½ blood white	.37 – .40
Hard ends, fine colored	.25 – .27
Hard ends, medium colored	.18 – .20
Card, fine white	.23 – .26
Burr, fine Carbonizing	.27 – .30

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, Coarse Light	$0.05 –$0.05½
Merinos, Fine Dark	.03½– .04
Merinos, Fine Light	.11 – .11½
Serges, Blue	.05½– .06
Serges, Black	.05½– .06
Serges, Red	.08 – .09
Knit, White	.23 – .24
Knit, red	.10½– .11
Knit, Light Hoods	.13 – .14
Worsted, Light	.05 – .05½
Worsted, Blue	.05½– .06
Worsted, Black	.06 – .06½

Silk Yarns

THROWN SILK (60 day basis)

	Nominal
Japan organzine, 2 thd. spec. gd. XX. sk. 85%	$4 05
Japan organzine, 2 thd. sp. crack. sk. 81%	3.70
Japan crepe, 3 thd. gd. XX bob. 83%	3.85
Japan crepe, 3 thd. sp. crack. bob. 81%	3.75
Japan crepe, 4 thd. crack bobbins, 78%	3.65
Japan grenadine, 4 thd. sp. grand singles, 87%	5.10
Japan grenadine 3 thd. 90%	5.85
Canton crepe, 3 and 4 thd. ns. 14/16 on bobbins	2.70
Hosiery tram, 3 thd. Japan 90%	4.85
Hosiery tram, 5 thd. Japan, 85%	3.70
Hosiery tram, crack XX 78%	3.35

SPUN SILK YARNS (Terms: net 30)

40/2	$3.10	60/2	$3.45
54/2	3.30	62/1	2.35

Raw Silk

(60 Day Terms. Spot Goods.)

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 86/88%	$3.10	$2.50	$2.45
Special Grand, 85%	2.90	2.40	2.40
Grand XX, 83%	2.75	2.35	2.35
Special Crack, 81%	2.65	2.35	2.35
Crack XX, 78%	2.55	2.30	2.30
Extra Extra, 73%	2.50	....	....
Best Extra, 68%	2.45	....	....
Canton filature, new style, 14/16			$1.70
Canton filature, new style, 20/22			1.60
Tussah filature, 8 cocoon			1.00

NATIONAL RAW SILK EXCHANGE

	Close June 30	For the Week—High	Low	Close July 7	Net Change
July	2.45	2.53	2.40	2.42	—.03
August	2.44	2.50	2.40	2.41	—.03
September	2.42	2.50	2.36	2.39	—.03
October	2.40	2.49	2.38	2.39	—.01
November	2.40	2.49	2.36	2.39	—.01
December	2.40	2.49	2.36	2.38	—.02
January	2.40	2.50	2.36	2.39	—.01
February	2.40	2.49	2.36	2.39	—.01

Total number of bales	9,730
Total approximate value	$3,299,929.50

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
50	14	$2.15	$1.95
75	18-30	1.35	1.25
100	18-40	1.10	1.00
125	30-50	1.00	.90
150	30	.70	.67
150	24-40	.75	.72
150	60	.85	.82
150	75-90	.85	.82
170	24-27	.75	.72
170	60	.85	.82
200	30	.75	.72
200	35-42	.75	.72
300	42-62	.63	.60
450	54-60	.63	.60
600	72-96	.63	.60
900	100-144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	65	45	$2.00
25	24	2.85	80	60	1.70
30	24	2.60	100	75	1.35
40	30	2.40	120	90	1.22
52	30	2.20	150	112	1.10
			180	135	.97

ACETATE PROCESS

Denier	Price	Denier	Price
45	$2.25 2.75	120	$1.90
55	2.05–2.55	140	1.30
65	2.45	150	1.40–1.85
75	1.80–2.70	200	1.55
100	1.65–2.45	300	1.50

Rayon Waste

Open bleached waste	$0.13–$0.14
Open unbleached waste	.10½
Bleached thread waste (mfs.)	.09
Bleached thread waste (misc.)	.06– .07
Colored thread waste	.01
Colored clips	.04

CONVERTED RAYON WASTE

Bleached tops	$0.30–0.32½
Unbleached tops	.28– .29
Bleached noils	.11
Unbleached noils	.09½
Bleached garnetts	.12
Unbleached garnetts	.13
Colored garnetts	.10– .11

Silk Waste

Kibizzo Kakai Grand XX	$0.50
Kibizzo Kakai Triple Extra	.44
Frison Grand Double	.49½
Pierced Cocoons	.50

▸ Further Developments in Textiles, Inc., Organization

General offices of Textiles, Inc., Gastonia, N. C., it was announced this week, will be located in the Armstrong Building, 244 West Airline Ave. The accounting department, which will be in charge of J. C. Roberts, formerly connected with Ernst & Ernst, public accountants, will be centralized in the quarters formerly occupied by the Armstrong-Winget group of mills. Another section of the building which has been leased to the Gastonia Bowling Alley will be entirely remodeled and equipped for executive offices.

R. D. Talbert, recently associated with the offices of Wm. A. P. MacKnight, Philadelphia, has become connected with the offices of A. W. Latta, Philadelphia. He will represent the Hampton-Textiles, Inc., and the Textiles Inc. Sales Co., in covering the Pennsylvania State trade.

▸ Business Recovery Indicated by Leipzig Fair

Widespread business recovery is indicated by the variety of exhibits and the buying frame of mind of the nations which will attend the Leipzig Trade Fair this fall, according to the fair's New York representative. The historic fair, approaching its 700th anniversary, has long served as a barometer of business conditions and tendencies. It is estimated that the fair will attract 180,000 buyers from 72 countries, including 1,500 from all parts of the United States. This country will also be represented with some 200 exhibits. The fair will be held from Aug. 30 to Sept. 3. The Leipzig Fair at present maintains 326 representatives throughout the world to facilitate trade relations, and this highly organized machinery is placed at the disposal of all countries in business relations with Germany.

▸ Why the Commerce Department Seeks Publicity for Its Findings

(*Continued from page 36*)

of $40,000,000. This was the greatest statistical gathering effort in the history of the world, the plans for which were formulated by committees of nationally known experts from the business world. The varied findings of its enterprise control the nation's whole adjustment of life. Yet the cost of publishing its returns, to make them really useful, is one of the minor items in the census budget running to less than 2% of the whole. You can see that the suppression of that relatively moderate publication expenditure would be stupidly short-sighted when you consider the wastage if materials collected at such great costs were stored away and never saw the light of day.

Some of our critics assume that the stream of Commerce Department publications is turned on regardlessly, poured over people who do not want or use its items. The fact is, in the Commerce Department we are consistently anxious to refrain from thrusting unwanted material on anybody, and frequently examine the ground to see that we are avoiding that particularly kind of waste.

▸ Wool Prices Mostly Lower at Opening of London Wool Sales

London wool sales opened July 7 with prices mostly 5 to 10%, and some wools 15%, below the close of the previous sales in May, according to a cable received by the Bureau of Agricultural Economics from E. A. Foley, American Agricultural Attaché at London. Best greasy merino wools were mostly par to 5% lower, ordinary greasy merinos were 5 to 7½% lower, scoured merinos declined 10 to 15%, fine greasy crossbreds were par to 5% lower, medium and low crossbreds 10 to 15% lower, Cape and Punta Arenas wools were 10% lower.

▸ Pamphlet on Simplified Practice on Terry Towels

The availability of the printed pamphlet on simplified practice recommendation R119-31 covering fast-salvage terry towels (turkish towels) has just been announced by the division of simplified practice of the National Bureau of Standards. Copies of the recommendation, which establishes a simplified list of six stock sizes for this type of towel, can be obtained from the Government Printing Office, Washingston, D. C.

▸ Activity of Finishers

The National Association of Finishers of Cotton Fabrics has issued its monthly statement of percentage of normal average capacity operated in the industry. A season decline is shown in several items. The statement follows:

	1931 (4 Weeks) June		1930 (4 Weeks)
White and dyed combined	48	42	50%–White, 50%–Dyed
Fast black	20	14	
Logwood and/or sulphur black	35	33	
Prints	47	54	

	1931 (5 Weeks) May		1930 (5 Weeks)
White and dyed combined	54	49	47%–White, 53%–Dyed
Fast black	18	18	
Logwood and/or sulphur black	34	34	
Prints	62	63	

▸ Enka and Industrial Announce New Rayon Numbers

Two new rayon numbers made their appearance in the market this week. American Enka Corp. announced a dull-luster yarn, known as "Perlglo," suitable for knitting and weaving; this yarn is now in production. Industrial Rayon Corp. announced that its Spun-Lo yarn hereafter would be available in 30-denier, now giving this number seven deniers, from 30 to 300.

▸ Sees Union Foothold in South in 20 Years

Estimating that 20 years will be required for the American Federation of Labor to establish a foothold in the southern textile industry, Geoffrey C. Brown, consulting engineer for that organization, who is making a study of labor conditions in the South, recently declared that the A. F. of L. is agreeably surprised with the way in which newly formed local unions have retained their strength during the business depression and general unemployment situation.

Approximately 70 employees of the Ellis Silk Hosiery Co., Charlotte, N. C., all members of the day shift at the company's full-fashioned plant, went on strike July 6 in protest against the dismissal of an operative. The walkout, it was stated, included several union knitters recently transferred to Charlotte from Philadelphia.

▸ Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended July 3, based upon data compiled by the Department of Agriculture, follow:

	Week Ended July 3	Total to Date 1931	Total to Date 1930
Domestic	12,133,500	113,207,500	106,191,000
Foreign	1,027,000	26,685,000	39,028,000
Total	13,160,500	139,892,500	145,319,000
IMPORTS AT PRINCIPAL PORTS			
Boston	1,027,020	26,785,000	39,028,000
Philadelphia	767,719	27,822,000	29,624,000
New York	710,043	27,660,000	27,197,000
Total	2,504,782	82,273,000	95,849,000

▸ Big German Wool House Reported Failure

The Norddeutsche Wollkaemmerei und Kammgarnspinnerei, of Bremen-Delmenhorst, one of the largest woolen and worsted organizations in Germany, which has been facing reorganization due to a big increase in its bank debts, was reported in dispatches as having failed, Wednesday. The report placed the company's liabilities at 240,000,000 marks.

▸ Fashion Clinic in New York, July 20-23

The seventh semi-annual Fashion Merchandising Clinic for retail stores will be held by Amos Parrish & Co. in New York at the Hotel Pierre, July 20 to 23.

▸ Soviet Cotton Acreage on June 5 Was 6,125,000 Acres

Soviet cotton sowings on June 5 totaled 2,480,000 hectares (6,125,000 acres), or 8% above the plan, according to the *Soviet Economic Review*. Uzbekistan, the most important cotton region, sowed a total of 1,139,000 hectares.

▸ Fastness to Light of Dyed Textiles

Results of tests to determine the relative fastness to light of 1196 dyeings representing 366 dyestuffs have recently been tabulated by the American Association of Textile Chemists and Colorists.* In these tests, dyeings on cotton, wool, silk, and weighted silk were exposed at an angle of 45° from the horizontal, facing south, between 9 a.m. and 3 p.m., only on sunny days, and were covered with a good grade of window glass, the sides of the containers being open to allow free access of air. Each sample was exposed for four different periods of time, each period being double that of the next shorter period. The most fugitive samples were exposed for 6, 12, 24, and 48 hr. Depending on the fastness of the color, other samples were exposed for longer periods of time, up to 768 hr.

The samples were then classified. Dyeings which showed an appreciable alteration in color when exposed for 6 hr. were assigned to the lowest class, Class O. Dyeings which showed little or no alteration in color when exposed for 6 hr., but which showed an appreciable alteration in 12 hr. were assigned to Class 1. Other dyeings were assigned to Classes 2 to 6 on a similar general basis. In order to eliminate the uncertainty inherent in the terms "appreciable" and "little," dyeings were selected to represent the minimum requirements for Classes 1 to 6. Use of these standards of fastness made it possible to take into account the changes in color of dyeings in the longer exposures, changes which can not be adequately described in the classification scheme, outlined above. Choice of standards for general use is an important outcome of the work which is receiving further attention.

▸ Wool Goods Rally Temporary Unless Output Is Guarded

(Continued from page 59)

increase their margins substantially. The adjustment between production and consumption represented by the ratio of worsted spindles to looms has been a fair indicator of the statistical position of yarn, and any maladjustment such as is now developing has usually been soon reflected in poorer replacement margins for spinners. Yarn prices are likely to hold fully as strong as raw wool, but unless there is better balanced production, replacement margins will suffer.

The decline in the Bureau of Labor Statistics woolen and worsted goods price index in May was less rapid than in April. The index was 75.4% of the 1921-28 average, against 76.3% in April, and 87.7% a year ago. The TEXTILE WORLD index of wool cloth prices, after declining one point in April, remained unchanged in May.

Manufacturers' replacement margins declined again in May and were the lowest since January, 1925. This was true notwithstanding lower raw wool prices, and it follows that supply and demand were not favorably balanced in the wool textile markets as a whole.

We know that wool loom activity increased more than usual in May and made the best showing for any month since November, 1929. Wool cloth production, then, has increased while replacement margins have declined. Wool cloth consumption in general has apparently lagged production. Trade reports indicate a strong demand for men's wear staple goods, but the demand for better grade cloth has been disappointing.

The margins for staple goods have improved slightly, because (1) stocks are scant and demand for cutters' nearby requirements for men's wear has been urgent; and (2) raw wool prices averaged lower in May and June.

▸ Propose Development Company to Aid South American Trade

Eight large American concerns interested in Latin America are discussing the possibilities of joint action in an effort to speed up development in some of the countries and to cooperate in any plan looking to the creation of more stable business structures.

A part of the plan to which thought is being given is the organization of a development company somewhat similar to the Hudson Bay Co. The natural resources of Latin America hardly have been scratched. Capital will be found for the development of resources, and large-scale, low-cost operating and distributing plans will be worked out. Activities of the proposed Hudson Bay type of corporation will not be confined to development of raw material industries. The plan is to enter a large number of fields including banking and manufacturing.

▸ Bemberg Umbrella Taffeta Offered

An all-Bemberg umbrella taffeta is announced by Bloomsburg Silk Mills. Two years were spent in perfecting this fabric, which is guaranteed color fast and waterproof. The taffeta is marketed under the name "Rain-Tex," and Buetzer & Houser, New York, are sole selling agents. "Rain-Tex" is offered in brown, navy, green and black, and additional colors are under way. Umbrella ties will be labelled "Rain-Tex made of Bemberg."

▸ Raw Silk Imports Rise 31.3%

Raw silk imports for the first half of 1931 were 31.3% higher than during the same period of 1930, according to figures issued by the Silk Association of America, Inc. Deliveries to mills showed an increase of 8.9% while stocks at warehouses on June 30, were 37,352 bales as against 28,450 bales on June 30, 1930.

▸ Design Protection Group to Function at Once

Members of the cotton, rayon, woolen, linen and silk industries will be invited to join the Design Protection Association during the coming week, and the association will start functioning immediately, it is stated by Sol C. Moss, chairman of the Anti-Piracy Group of the Silk Association of America, Inc.

Beginning Sept. 1, all designs registered with the Design Association's Design Bureau will be sold on a contract in which the buyer agrees not to copy the design or to purchase a copy of the design, and all fabrics printed with these designs will be marked to indicate that they have been so purchased.

The Design Protection Association will act as a strong ethical force opposing piracy of designs throughout the Textile market and as an aggressive advocate of legislation by Congress, Mr. Moss said. It will also present an immediate practical solution to the piracy problem until laws are passed.

▸ Low-Inventory Policy Dropped by R. H. Macy & Co.

R. H. Macy & Co., Inc., New York, has announced in a consumer advertisement that it had decided to discontinue, for the present, at least, the policy of maintaining minimum stocks at inventory time. The advertisement, headed, "Honest Confession is Good for the Soul," stated that the store "is not going to err in this inconsiderate way any longer," and that merchandise stocks are not being cut down for the July inventory. The statement excited much interest among textile manufacturers, especially those selling direct to retailers, and to whom the low-inventory policy of retailers has proved a serious problem during the last 12 months; it also raised speculation as to whether other retailers throughout the country might follow Macy's lead, in maintaining the necessary variety of choice for the customer.

▸ Ziegfeld Chorus Costumes Highlight Celanese

Celanese fabrics are accented in the costumes of the chorus in the new Ziegfeld Follies, just opened in New York. For the attire of the glorified ladies of the ensemble Mr. Ziegfeld chose Celanese satins and crepe satins. The gowns were created by Russek's design studio and duplicates of them are available at Russek's, New York. Mr. Ziegfeld selected the fabrics personally.

▸ Utica Gets Contract for Sheeting for N. Y. State

An order for more than 800,000 yards of sheeting has been given the Utica Steam and Mohawk Valley Cotton Mills, Utica N. Y., by the State of New York.

*Wm. H. Cady, Wm. C. Smith, and Wm. D. Appel, "Classification of the Fastness of Dyed Textiles in the Standard Sunlight Exposure Test," *American Dyestuff Reporter*, 20, 359, June 8, 1931.

New Books

PRINCIPLES OF KNITTING, by Max C. Miller, M. E. 234 pages. 9x5¾. 195 illustrations. McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City. Price $4.

Readers of TEXTILE WORLD followed with much interest the long series of articles by Mr. Miller on the past, present, and future of knitting mechanism, which ran in this publication from 1926 to 1929. Many of them have, from time to time, expressed a desire to see this series published in a book. To these men, and undoubtedly to many others, the news that the articles are now available in book form will be exceedingly welcome.

Mr. Miller, in his capacity of designer and inventor of knitting machines and fabrics, is particularly well qualified to write an authoritative book of this character. He is familiar with the patent art of the United States, and of other industrial countries. His book, which contains much practical information on the various types of circular, flat, and warp machines, will appeal alike to workers in the hosiery, underwear, and outerwear branches of the knitting industry.

An interesting feature of the book is the comparisons of latch and spring needles and their uses, of circular and flat knitting machines, of full-fashioned and circular hosiery, and of filling and warp knitting. A chapter is devoted to split, float, and plated designing. Descriptions and discussions are included of fashioning mechanisms; precautions against drop stitching; tricot, milanese, Raschel, and circular warp machines; equipment for knitting plush; and many other interesting methods and machines. There is a wealth of material on various means employed for sinking yarn, pressing beards, opening latches, knocking over loops, forming stitches, inspecting needles, holding down the web, taking up the fabric, truing needles, and equalizing loops. Many stocking manufacturers will be interested in the discussion of warp-knitted hosiery. Unquestionably this work is the most complete and accurate treatise on the fundamental details of knitting thus far published.

PRINCIPLES OF CLOTHING SELECTION; Revised Edition; by Helen Goodrich Buttrick; New York; The Macmillan Co.; $1.

The author of this study of dress psychology and its application, has revised her work, bringing it up to date and representative of the newest trends in costume design instruction. An outstanding addition to the volume is the emphasis placed upon the relation of health to apparel; the economics of apparel also is given particular attention, in the light of changes in the production and selling of clothing that have developed during recent years.

INDUSTRIAL EVOLUTION; By Norman S. B. Gras; Cambridge, Mass.; Harvard University Press; $2.50.

The development of industry in Europe and America, from its most primitive stages through to the modern highly mechanized methods, is traced in non-technical terms by Mr. Gras, who is the Straus professor of business history at the Graduate School of Business Administration, Harvard University. Prof. Gras' work is in line with the contemporary trend to pay more attention to the social aspects of history. The textile industry will be especially interested in his chapter, "Cottons in New England" which describes, in text and pictures, the growth of the cotton industry in the New England States since the Revolutinary War. The mechanical problems that faced the early weavers were many and formidable and their ingenious methods of solution paved the way for the succeeding mechanical age.

MANUAL OF THE TEXTILE INDUSTRY OF CANADA: 1931 EDITION. 1434 St. Catherine St., West, Montreal, Canada: Canadian Textile Journal Publishing Co., Ltd.

Leading figures in the textile industry of Canada who contribute articles to this annual, emphasize the importance of competition both domestic and foreign, but take an optimistic view of the general outlook. The authors include: E. S. Bates, editor of the *Canadian Textile Journal* and editor of the manual; M. B. Holton, president of the Canadian Woolen and Knit Goods Manufacturers' Association; P. R. Watson, president Silk Association of Canada; F. G. Daniels, president Dominion Textile Co., Ltd.; A. O. Dawson, president Canadian Cottons Ltd.; C. W. Bates, president Bates & Innes, Ltd.; George Dobbie, of Newlands & Co., Ltd. The book also contains intreviews with David C. Dick, S. J. Cragg, John M. Lalor, T. D. Wardlaw, L. Biggin, A. E. Stewart and J. A. Burns. These statements and interviews present a cross-section of opinions from leaders in all branches of the textile industry. In addition to providing the latest statistics on development and production in the textile industry, this volume offers a series of special articles.

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Business Literature

Strippers. Saco-Lowell Shops, Boston, Mass. New catalog describes characteristics and advantages of Saco-Lowell continuous card strippers.

Speed Control. Reeves Pulley Co., Columbus, O. Handbook analyzes variable speed control, and offers service manual and full data on Reeves speed transmissions.

Chain Drives. Link-Belt Co., Indianapolis. Textile manufacturers testify to good service of Link-Belt silent chain drive in mills, in new booklet.

Worthington Catalogs. Worthington Pump & Machinery Corp., Harrison, N. J. Catalogs cover deep well and power vacuum pumps, gas engines, rock drills, Diesel engines, the Multi-V Drive and duplex piston pumps.

General Electric Catalogs. General Electric Co. Schenectady, N. Y. Wide range of induction motors, steam turbines, switches, heaters and pumps described in illustrated new catalogs.

Temperature Control. Fulton Sylphon Co., Knoxville, Tenn. Services of radiator valves, of various types, and their newest improvements explained.

Vulcanized Fiber. Continental Diamond Fiber Co., Newark, Del. Industrial uses of vulcanized fiber described in booklet which also cites this firm's line of equipment.

Westinghouse Catalogs. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Small power motors, loom motors and control explained in series of catalogs.

Coal Transport. Fuller Lehigh Co., New York, N. Y. Folder shows how Fuller-Kinyon transport system "pumps coal like a fluid."

Valves. Crane Co., Chicago. New developments in valve equipment described in house organ, "The Valve World."

Steel Heddle Catalogs. Steel Heddle Mfg. Co., Philadelphia, Pa. Frames for plush and velvet weaving, for cotton silk and rayon weaving and for wool and worsted weaving, are described in three catalogs of this house.

Power-Plant Equipment. International Nickel Co., New York. Power plant equipment, with particular reference to properties and uses of Monel metal is considered in detail.

Chemical Equipment. Consolidated Products Co., Inc., New York, N. Y. Describes line of filter presses, dryers, mixers, extractors, and other machinery for chemical division of textile industry.

Business News

Boston & Maine Establishes a Foreign Service for New England Industry

A foreign trade service in 23 countries in Europe and the Near East was established on July 1 by the Boston & Maine Railroad in the interest of New England industries, New England ports and of the railroad itself.

The Boston & Maine program includes provision for the development of new foreign markets for the products of New England industry; and for increasing the flow of import and export traffic through New England ports.

In organizing this new foreign service, the Boston and Maine engaged the Bush Service Corp. which has some 700 offices in Europe and the Near East.

Surveys Cincinnati as Location for Silk Manufacturing

The Union Gas & Electric Co., Cincinnati, Ohio, has just prepared through its research department a report entitled "Cincinnati as a Location for the Silk Manufacturing Industries." The report considers both hosiery and broad silks. It analyzes the following factors: labor, raw materials, water supply, climate, power and fuel, transportation, capital requirements and markets. The conclusion reached is that Cincinnati is an excellent location for the silk manufacturing industries.

Link-Belt Pacific Division Elects Ralph Hoffman Vice-president

Ralph M. Hoffman, for eight years manager of the Seattle office of the Pacific Division of Link-Belt Co., has been appointed vice-president and sales manager of that division, with headquarters at San Francisco. He succeeds Harold H. Clark, who retired on June 1, after 30 years of service to the company.

New Glyco Agent at Detroit

Glyco Products Co., Inc., Brooklyn, N. Y., recently appointed new representatives for Detroit and surrounding territory. Solvents & Chemicals, Inc., 8747 Brandt Ave., Detroit, will handle the heavy chemicals for leather, textile, rubber, varnish and other technical industries.

A prospect hole on the phosphate rock property lately acquired by the Victor Chemical Works, Chicago, from the Globe Phosphate Co., in Maury County, Tenn. The Victor Company produces trisodium phosphate, formic and oxalic acid, epsom salt, sodium phosphate, etc., and certain fire-proofing compounds.